Permanent Partial Disability: Alternative Models For Compensation

Paul C. Weiler

A report submitted to:

William Wrye
Minister of Labour

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November 25, 1986

The Honourable William Wrye
Minister of Labour
Province of Ontario,
Toronto, Ontario

Dear Mr. Minister:

I am pleased to deliver to you my third Report of my review of issues in workers' compensation in Ontario. This Report analyzes how best to compensate workers who suffer permanent partial disabilities. I look forward to speaking with you personally about my recommendations in this Report.

Respectfully,

Paul C. Weiler
Professor of Law

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Part I

The Dilemma of Permanent Partial Disability in Ontario

1.

In early 1980, I was asked to review the system of workers' compensation (WC) in Ontario. The initial product of this inquiry was a report entitled *Reshaping Workers' Compensation*. I found a great many areas of concern in both the legislation and the administration of the workers' compensation program and I made numerous recommendations for changes in both the statutory benefits which were available and the procedures through which claims were considered. Unquestionably, though, the most contentious problem was that of permanent partial disability (PPD). This problem elicited the most extensive and complex set of proposals in my Report, and these proposals evoked the most heated reactions and dissent within the Province. Thus when the previous government proceeded to enact the bulk of my recommendations into law through Bill 101, the question of permanent partial disability was left in abeyance for a Phase Two of workers' compensation reform. In connection with this second phase, I was asked to supervise some further investigation of the problem, to review developments in Ontario and elsewhere in the 80s (the essence of my recommendations having been adopted in New Brunswick, Newfoundland and Quebec), to analyze the several options for reform, and to make my final recommendations for action in Ontario. In this latest Report on this subject, I shall provide a detailed account of how the PPD issue has unfolded in Ontario in order to lay bare the ingredients of the problem and the several models for reform. In the second Part, I shall address the different arguments and options on their merits and state my current views about how this perennial sore spot within workers' compensation should be handled.

2.

Why has permanent partial disability always been such a dilemma for workers' compensation, not just in Ontario but in all jurisdictions in North America? One can get some inkling of the reasons why by comparing PPD with the other two major categories of WC disability benefits, for temporary (TTD) and permanent total (PTD) disabilities.

The traditional aim of workers' compensation has been to compensate the disabled worker for the loss of work and income which a workplace injury has caused. *Temporary* benefits are paid for relatively short periods immediately following the incident, while the injury is healing. It is relatively easy, then, for the WC tribunal to establish the connection between the original injury and the current absence from work. *Permanent* partial benefits, by contrast, are paid for disabilities that last for a very long time, up to fifty years or more. Gradually the relationship between the initial injury and the present loss becomes fainter, overshadowed by other changes in the worker's life and employment.

Of course, permanent *total* disabilities also exhibit that same lifetime feature. However the magnitude of this kind of disability is itself enough to make clear that the reason why a quadriplegic, for example, is not working now is because of the workplace accident which he may have suffered a decade or more ago (and fatal accidents are simply the most "total" of disabilities in this respect). By definition, though, a worker with a permanent *partial* disability is capable, at least in principle, of working again; if not in his old job, then in a different one (albeit at some reduced capacity). Not only does this feature account for the difficulty in deciding whether the current loss of work and income is really due to the disability (as opposed to purely economic conditions, for example), but the presence and prospect of PPD benefits may itself alter this causal relationship. In other words, if it is known that a disabled worker will collect WC benefits if he is not working, that might influence his readiness to look for and accept jobs for which he is *not* disabled (and may also influence the employer's readiness to offer such alternative jobs). The textbook illustration of this dilemma is the deteriorating back condition, which

accounts for about one-third of PPD cases and a far higher proportion of the difficult ones. As I recognized and explained in my first Report, there is no easy and ideal way in which to design a benefit through which society will compensate a worker who has developed a lower back problem. Thus I was not terribly surprised that my initial recommendations for this and other PPD cases eventually attracted the degree of controversy they did.

3.

The approach of Ontario workers' compensation to this problem is in line with the traditional PPD model in other jurisdictions in Canada and the United States. (I should note, though, that the legality in Ontario of this traditional approach to PPD claims has been challenged in a major test case recently heard by the Workers' Compensation Appeal Tribunal: since my concern is with the future evolution of compensation policy, I express no view about whether the Board's current practice does square with the existing Act.) When the employee's injury has stabilized – i.e., when the stage of maximum medical improvement has been reached – the worker is examined by a Board doctor to determine what is his level of *physical impairment*, in the sense of what degree of bodily incapacity in normal functioning remains as a result of the original injury. This examination generates an estimate of the percentage impairment of this worker compared with a person with a "whole body". For certain obvious and identifiable incapacities – e.g., the loss of a particular limb – there is a Schedule which fixes the percentage impairment: e.g., 60% for loss of an arm at the elbow and 35% for loss of a leg below the knee. For other, less identifiable situations, such as the partial loss of use of a limb or the deterioration in and pain from an internal feature of the bodily system (again, the lower back being the paradigmatic case), the WC Board doctor arrives at a more individualized, judgmental figure. In either case, though, this percentage impairment rating is then applied by the Board's adjudicator to the worker's compensable pre-injury earnings to produce a specified *disability* benefit in the form of a lifetime pension (whose amount is adjusted annually to the rise in consumer price inflation in order to preserve the pension's real purchasing power).

As we shall see, there are certain administrative virtues to this kind of *clinically*-based benefit for PPD cases. As a form of compensation, though, it is highly unsatisfactory because it simply does not fit squarely with either of the types of loss which disabled workers typically experience and for which they seek monetary redress.

Suppose we were to assume that the prime purpose of a PPD benefit is to compensate for the effect of the physical impairment itself upon the worker's ability to function in his normal everyday life. Given that aim, there might be some plausibility to the use of a clinical procedure to estimate the level of physical incapacity. The problem is that the actual pension is then calculated with reference to the individual's own pre-injury earnings. That means that if a secretary earning $15,000 a year and an administrator earning $30,000 a year are both involved in a car accident while on the job, and each loses a leg, the pension which the former collects will only be half the amount paid to the latter; this is so even though they both suffer the same physical injury with potentially the same impact upon the future enjoyment of their lives.

There is, of course, an explanation for the use of pre-injury earnings in calculation of the pension: the major historic role of workers' compensation has been to replace the wages lost as a result of the injury. But if that is the real harm which workers' compensation is trying to redress through its PPD benefit, it makes little sense to use the clinical impairment rating as the other factor in the formula, because this rating bears only an accidental relationship to the earnings loss which any one worker will experience. In practice, the amount of lost wages will depend as much on the occupation, education, skills, age and location of the worker as upon the physical injury he has suffered. For example, if a construction worker and an office worker, each earning $25,000 a year, are both injured in that auto accident referred to earlier, again each losing a leg, the former will likely suffer a substantial drop in future wages, while the latter will experience little or no earnings loss at all. Under the current law, though, the fifty percent figure in the rating schedule for loss of a leg (from mid-thigh down) will produce precisely the same PPD pension for the two of them. Again, then, whatever the objective one supposes that PPD benefits are to serve, the clinically-based pension serves neither of them very well.

There is nothing particularly novel about these objections to this traditional "meat-chart" approach (as it is often labelled) to PPD cases. Some time ago, the Ontario legislature and the Workers' Compensation Board responded to the most pressing of these concerns, the underpayment of those workers whose degree of physical impairment was much lower than their

actual earnings loss: these workers were extended supplementary benefits to top off the PPD lifetime pension. On the face of the Act, though, these supplementary benefits seem designed as a temporary support during the worker's rehabilitation and return to employment. More recently, the period of payment has been gradually expanded by administrative and statutory developments, most notably for older workers injured not too long before their normal retirement date. However, in most contexts there still remain inherent limits to the availability of these supplements to provide anywhere near full compensation to those disabled workers whose basic clinical pension is inadequate to compensate for actual wages they have lost.

The other side of the coin has not yet been addressed under the Act. If we judge that some workers are indeed under-compensated by the current regime when their clinically-based pension pays them less than the earnings they have lost from their job, then other injured workers must be said to be over-compensated when they receive the same pension even though their injury does not preclude them from returning to work at essentially the same earnings as before (as is true of the majority of PPD beneficiaries). This is not to deny that these partially disabled workers, even though they may be able to return to their old job and salary, are still physically impaired: thus they do deserve some kind of WC benefit as compensation for this loss in enjoyment of other facets of their lives (a benefit whose form and size I shall take up shortly). But the objection expressed by a good many employers about the current PPD system is that large numbers of injured workers who experience little or no long-term earnings loss should not be entitled to draw a full, lifetime disability pension (now indexed to the rate of inflation), given that the historic rationale of this benefit was primarily to compensate workers for wages lost as a result of a workplace injury.

4.

My 1980 proposals to deal with this dilemma followed the lead of a major PPD innovation introduced in the late 70s in the compensation programs in Saskatchewan and in Florida. The basic idea was quite simple. The permanent physical impairment left by a workplace injury created, potentially, two distinct kinds of harms; the first in the victim's capacity to enjoy his normal everyday life, and the second in his capacity to earn his usual income from work. Rather than have a single benefit, then, based on a clinical rating applied to pre-injury earnings – which typically was ill-fitted to either of these types of harm – the PPD provision should have two components, each carefully tailored to the one kind of harm which it is designed to remedy.

As I noted earlier, the traditional premise of workers' compensation is that it compensates solely for the economic losses of injured workers, on the view that payment for purely non-pecuniary losses – i.e., "pain and suffering" – is inappropriate in a guaranteed no-fault program. In actual practice, though, the PPD system has long awarded substantial benefits to many disabled workers who suffered no significant wage loss. In my view, that practice was much more defensible than the original premise. It would be terribly unfair to the office worker who has lost a leg in a workplace accident (to use my earlier illustration) to deny him any compensation at all because he was able to return to work at his old job, thus ignoring the fact that the disability did produce a severe disruption in his daily activities. On the other hand, while the principle of compensating for such a harm was perfectly defensible, once one recognized that this was the type of loss which the PPD benefit was actually redressing here, the size and shape of this benefit had to be transformed accordingly.

First, the calculation of the benefit should be based solely on the degree of impairment, not be related to the levels of pre-injury earnings. One could not justify paying the secretary half the level of compensation that was paid to the administrator when each was experiencing the same disability in their everyday lives. Second, in line with the Saskatchewan and Florida legislation, I recommended that the physical impairment benefit be paid in a lump sum rather than a periodic pension, to distinguish it clearly from the other "wage loss" component of the PPD provision which would be designed to replace earnings losses as and when these occurred. But I proposed a much higher level of compensation than was provided in these other two jurisdictions (a maximum of $3,000 in Florida and $10,000 in Saskatchewan): up to $40,000 for the worker who was totally disabled at the age of forty, a figure which would range upwards to $60,000 as the age at injury neared 20 and downwards to $20,000 as the age at injury reached 60.

As I shall relate shortly, this proposal attracted considerable criticism, but nothing like the flak which enveloped the other component of my PPD proposal. Again, the idea behind this second feature was quite simple. Unquestionably the major role of the periodic payment by workers'

compensation is to replace the earnings loss by injured workers. In the case of permanent as contrasted with temporary disabilities, though, the Board has begun with a clinical rating of the physical impairment, and then used this percentage figure to fix a lifetime pension that can only be altered (at least for this same physical injury) to take account of future changes in consumer prices. In actual practice, the size of this pension payment bears only an accidental relation to the amount of earnings being lost when the pension is first awarded, and subsequent to that date there would often be wide swings in the earnings of individual workers (whether up or down), none of which could be reflected in the WC benefit.

The purpose of the proposed new wage loss benefit was to do away with this arbitrary and inequitable mismatch of lost earnings and compensation payments. Just as it has always done in cases of temporarily-disabling injuries, the Board would be directed to find out how much wages the permanently disabled worker was actually losing as a result of his injury, use this figure to set the initial PPD periodic payment, and then be prepared to vary these payments in the future if and when the amount of wages went either up or down.

An important corollary to this concept was that one could not justify paying such a wage loss benefit for the entire life of the injured worker, because typically he would not actually lose wages for the rest of his life. The vast majority of non-disabled workers retire when they reach a certain age – typically at or around sixty-five, which is when most public and private pension plans start to pay retirement benefits. As of that time, then, the loss of *wages* benefit would also come to an end, to be replaced by a loss of *pension* benefit under which the WCB would make up the retirement income lost by workers as a result of their disability.

5.

The foregoing was the basic recommendation that I made to reform the existing clinically-based PPD award. The initial reaction in the province was relatively favorable. With some modifications, the Conservative government of the day incorporated the ingredients of my proposal into its 1981 White Paper on Workers' Compensation Reform (which included a new draft Act that spelled out what this new system would look like in detailed legal language). This dual award concept was actually enacted into law in New Brunswick (1982), Newfoundland (1984) and, in its most recent and sophisticated version, in Quebec (1985). Had Ontario followed along that same path, it is likely that we would now see this as the standard PPD model within contemporary Canadian workers' compensation.

As it turned out, though, this new concept did not become law in Ontario. Resistance to the idea gradually built up in a number of quarters. While most employer groups accepted the basic principles of the reform (even the explicit payment of WC benefits for purely non-economic losses), they gradually became uneasy about the potential cost of paying for essentially all the net wages lost by disabled workers (a concern which was exacerbated by the appearance in the early 80s of a huge and fast-growing unfunded liability in the WC program as a whole). But the most vigorous objections to the idea were pressed by trade unions and injured worker groups who eventually concluded that the substance of this reform would be more harmful than helpful to disabled workers.

At the same time, few if any of the critics of my Report and of the White Paper were strong adherents to the *status quo*, the clinically-based PPD pension. Indeed, most of these groups agreed not only with my diagnosis of the ailments of the current "meat-chart" approach, but also with the form of the alternative I had prescribed – a dual award. The focus of their objections was on the content of each component in the dual award. I believe that a number of these concerns are valid, and, indeed, I had expressed some of them myself in my first Report. I shall deal with these objections in detail in the second part of this report when I express my own reactions and revisions to my initial proposals. At this stage in my narrative of how the PPD question has evolved in Ontario, I shall simply give a brief synopsis of the key criticisms.

With respect to my proposal for the non-economic consequences of physical impairment, there were three recurring objections. First, this benefit should not be paid as a lump sum but rather as a lifetime pension, because the injury itself would endure for the rest of the worker's life. Second, it was unfair and discriminatory to have the lump sum vary with the age of the worker at the time of disability, because it was quite possible that a disabling injury could produce even greater disruption and deprivation in the lives of some older workers than in the lives of other younger victims. Third, and most emphatically, the size of the proposed awards was said to be far too low,

especially when compared to the value of the lifetime pensions currently being awarded for that same injury under the present Act.

By far the strongest criticism, though, was directed at the other feature of the proposed dual PPD award, the wage loss benefit. The oft-voiced refrain in the 1983 and 1984 hearings of the Select Committee of the Legislature on the White Paper was as follows: Ontario's disabled workers were being asked to give up the valuable security of a fixed pension, guaranteed for life, protected against inflation, and held as a matter of legal entitlement, in return for an ephemeral promise of continually varying payments for whatever happened to be the wage losses attributable to their disability, all held at the grace and discretion of an administrative tribunal, the not terribly popular Workers' Compensation Board.

In more tangible terms, many objected to the fact that disabled workers would periodically have to show how much money they had been earning since the injury, so that the Board could accurately calculate the amount of wages actually being lost and adjust the benefit payments accordingly. But by far the greatest worry stemmed from the fact that, as I stated earlier in this document, the longer the time that elapsed between the initial injury and the current drop in earnings, the harder it became to decide whether the latter loss was actually caused by the former accident, or was really due to later events in the life of the worker or in the outside economy. Even worse from this perspective, I had been candid in my Report in stating that a wage loss system had to provide (as Saskatchewan and Florida did then and New Brunswick, Newfoundland and Quebec do now) that if a disabled worker was unwilling to work in a job which was suitable and reasonably available to him, he must be *deemed* to have received the earnings of that job for purposes of calculating the wages lost as a result of the initial injury. No workers' compensation system could afford to announce that it would pay to a disabled worker essentially the same earnings if he chose not to work at a job for which he was not disabled as he would earn if he did accept the responsibility and constraints of going back to such work. But while few would dispute this as a matter of principle, it is also true that the decision about whether a particular job was really suitable and available for an individual worker added one more delicate judgment to the assessment of the connection between past injury and present loss. All of this seemed to accentuate the rather tenuous quality of this new wage loss benefit in the eyes of workers who had grown accustomed to pensions set on an apparently objective clinical basis, and then guaranteed for their lifetimes.

6.

It was no great surprise to me that people found reasons to object to the notion of "wage loss." In my Report, I had acknowledged the validity especially of that last concern. While I had offered reasons why these criticisms were not, on balance, persuasive to me, I concluded on an explicitly nondogmatic note, offering my proposal "not as the ideal but as the least unattractive of the available options" (p. 67). By the time of the Select Committee hearings on the White Paper, the focus of attention was much more on the vices than the virtues of the dual award proposal (to some extent due to changes in Board practice which I will describe in the next Section). And the appeal of the traditional clinically-based lifetime pension was exhibited in the rather different reform proposals developed by the then opposition parties, the Liberals and the NDP in their dissents to the 1984 Select Committee Report.

Under the NDP version, the WCB would continue to estimate the degree of physical impairment of the worker and then apply this percentage rating to the average industrial wage (AIW) in the province, in order to derive a pension benefit for this non-economic loss. Because these clinical ratings were to be applied to a common wage base for all disabled workers, rather than to the actual earnings of each individual worker, whatever these might be, injuries of the same physical type and severity would then receive the same size of award. As well, because these clinical pensions were based on the full average industrial wage rather than 90% of the worker's own net, after-tax wages, this one benefit would be roughly one-third more valuable than the entire pension under the existing Act. Added to the overall PPD provision would be another earnings-loss benefit, under which the WCB would compensate the disabled worker for his estimated loss of earnings capacity produced by the injury. Rather than the *dual award* contemplated by the White Paper, which implied a substantial redistribution of the available dollars between two distinct benefit payments, the NDP proposal involved a *double* (or *duplicative*) *award*, a full clinical pension as now and another earnings loss pension superimposed on top of it.

The Liberal proposal, by contrast, had quite a different form. It started from the same clinical rating, though applied to *half* the average industrial wage so as to generate a fixed inflation-protected pension. This would guarantee all disabled workers a basic lifetime pension for their physical impairment, at roughly two-thirds the value of the current PPD benefit. The Liberals, like the White Paper, would then go on to compensate for actual lost wages as well; they would do so, though, by adding to this basic pension only the amount of lost wages which were in excess of the pension payments already being made. While the Liberal proposal, then, had two different criteria for calculating its PPD benefit – physical impairment and wages lost – ultimately there would be just a single *blended award* which would be no greater than the net pre-injury earnings of the disabled worker (adjusted for inflation).

7.

In the second Part of this Report, I shall analyze in detail the pros and cons of these alternative approaches to compensating PPD cases. Before doing so, though, I must relate a final and crucial feature of this evolving debate, one which took place not in the legislative/political arena but rather in the administration of the existing program by Board doctors and adjudicators. While the rest of us were engaged in extensive hearings, submissions and reports about what shape a new PPD benefit should take, the Board was transforming the shape in practice of the current provision. This process was gradual and largely invisible as it took place: it has now reached dimensions, though, which inevitably will alter the terms of the debate about PPD in the late 80s.

As I stated at the outset, I undertook my inquiry in early 1980. The PPD program which I was reviewing was the one that was in operation in the late 70s (and I shall use average data for the years 1976 through 1979). While there would be some variations year to year (depending on lost-time injury rates which themselves vary with the business cycle and levels of employment), the aggregate dimensions of PPD cases and awards was quite stable in that period. Every year the Board would award about 6,000 life pensions at a total capital cost (in 1985 dollars) of about $250 million (this included about 1,200 recipients of supplements at a cost of $15 million). Another 3,000 or so disabled workers would receive commuted-at-issue pensions (i.e. lump sum awards) at a total cost of about $40 million. Thus the PPD program which workers in Ontario were then experiencing, about which their representatives were vigorously complaining, and with respect to which I was making recommendations for reform was costing a total of approximately $290 million a year.

But before the ink had barely dried on my 1980 Report, the dimensions of this program were beginning to be radically altered, as shown by Table 1. From $290 million in 1979, the costs of PPD benefits rose to $330 million in 1980, to $370 million in 1981, to $465 million in 1982, and reached as high as $570 million in 1984, before dropping to slightly under $550 million in 1985. When one looks inside these aggregate figures, one finds a fairly modest increase in the commuted-at-issue awards (up to 4,000 at a total cost of $55 million), a more substantial jump in supplements (up to 1,800 workers receiving a total of $30 million) and a huge leap in the number and cost of life pensions (from 6,000 at $250 million to over 10,000 at about $500 million).

I must emphasize that this near doubling in just five years of the total cost of PPD awards reflects a *real* change in the actual administration of the PPD provision. None of these increases are due to inflation since all the figures I have used are in constant 1985 dollars. (If one were to use nominal dollar costs for the years in question, the actual jump was from just $100 million in 1976 to $550 million in 1985.) Nor can one find much of an explanation in changing injury rates in Ontario industry, because the rate of lost time injuries (LTIs) – those which are initially eligible for temporary benefits and thence constitute the pool from which PPD recipients are drawn – has been fairly stable over the last decade (though varying from year to year as the business cycle increases or decreases employment in the industries at risk). The inescapable fact, then, is that the Board is now much readier to award a PPD pension for any given number of LTIs, this increase being largely concentrated in the area of less severe disabilities. (A detailed examination of what happened to PPD pensions in Ontario from 1976 through 1985 was undertaken by Professor William Johnson of Syracuse University and Mr. Bruce Neville of the Board's Actuarial Branch: a copy of their paper is attached as Appendix A to this Report.)

The significance of what has happened in workers' compensation in Ontario becomes even clearer if one compares it with WC in Quebec, where this radical transformation in PPD costs simply did not take place. In 1985, Quebec made about 14,000 PPD awards, just about the same number as Ontario (though Quebec had about 20% more LTIs as its potential pool of PPD cases).

Table 1

Cost of Permanent Partial Disability Awards (Net 2% Discount Rate) 1976-1985 (Inclusive)

Year	Number of New Life Pensions Awarded (in thousands)	Pension Costs $ Nominal Not Inflation Protected Millions	Pension Costs 1985 Dollars Not Inflation Protected Millions	Pension Costs in 1985 Dollars Infl. Protected Net 2% Disc. Millions	Lump Sum Costs Nominal Dollars Millions	Lump Sum Costs 1985 Dollars Millions	Total Costs 1985 Dollars – Real (Col. 4 & Col. 6) *
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1976	5.95	81.3	157.8	259.4	19.8	38.4	297.8
1977	6.14	88.5	159.3	261.3	21.9	39.4	301.1
1978	5.27	81.6	135.8	223.1	21.3	35.4	258.5
1979	6.05	100.7	152.4	250.4	25.5	38.6	289.0
1980	6.05	128.4	178.2	293.0	28.3	39.3	332.3
1981	6.54	158.8	200.4	329.9	32.3	40.8	370.7
1982	8.54	216.2	250.4	412.3	44.7	51.8	464.1
1983	8.94	250.0	275.8	454.4	50.9	56.1	510.5
1984	10.23	294.9	309.6	510.6	54.8	57.5	568.1
1985	10.06	296.7	296.7	489.4	56.7	56.7	546.1

SOURCES: (1) New Life Awards – Exhibit I (Appendix I of Corrections to W. Johnson's report) originally from Actuarial Services' RD 63 SAS Summaries of the Pension Master (Oct. '85 & Jan. '86)

(2) Actuarial Services Schedule 1 awards V442 December Computer Runs (OD-1455)

(3) Column 2 Adjusted by Amendment Factors, which are from Column 2 of Table 5 of corrected W. Johnson's paper – Exhibit II

(4) Column 3 multiplied by a weighted capitalization converter (2% discount), weighted by per cent of males & females (Exhibit III)

(5) Claims Adjudication Branch Annual Reports

(6) Column 5 Adjusted by Amendment Factors in 1985 dollars (Exhibit II)

* Note: Includes lump sums at net 7% discount rate.

However the cost in Quebec of these pensions was about $265 million (using a 2% discount rate), versus the $550 million in Ontario in 1985. Thus the situation in Quebec now is comparable to what it was in Ontario in the late 70s. This marked difference in the experience in these two neighboring provinces just accentuates the degree of movement in Ontario under a statutory provision whose legal terms have changed not at all.

It is impossible not to discern in these figures some explanation for the changing climate for reform in Ontario. It is only natural that injured worker groups would exhibit much less animus towards the traditional "meat chart" approach when the latter has proved itself capable of channeling more than double the amount of real dollars into the pockets of disabled workers than it did just a decade ago. At the same time, of course, these increased expenditures upon PPD cases are a major factor in the rising costs of the whole WC program. Whereas assessment rates upon Ontario employers dipped as low as 1.6% of covered payroll in 1980 (rates which were based on the Board's 1975-1979 experience), they are now over 2.5% and projected to rise to 3% in the next couple of years. (I should add that the need to deal with the huge unfunded liability of the WC program is also a major factor in these rising assessment rates.)

I do *not* mean to suggest by this account that the PPD program in Ontario is now far too generous, and thus to imply that the level of expenditures in Ontario in the late 70s (and in Quebec now) is the right amount. One could just as easily make precisely the opposite claim, and applaud the Ontario Board for finally doing the proper thing by disabled workers in this Province. My point is quite a different one. These statistics furnish us with the raw material with which one can try to judge the overall generosity of the program for all disabled workers as a group. They do not tell us anything about the *equity* of the criteria by which these funds are actually distributed to individual beneficiaries within this group. The basic issue of the fairness of the program remains: how can one insure that those disabled workers who have suffered the severest losses – physical, financial, and personal – receive the highest compensation, and *vice versa*. It should be evident, though, that since the Province of Ontario now finds itself spending nearly $600 million a year upon permanently disabled workers, rather than the $300 million at the end of the 70s, this question should be even more, not less, urgent than it was then.

Part II

Future Paths for Permanent Partial Disability

A. Compensation for Non-Economic Harm

1.

Having given this account of how the issue of reforming PPD has unfolded in Ontario, I shall now assess the alternative paths which the province might take from here. I begin this appraisal with one key assumption. The current clinically- based PPD pension suffers from a fundamental deficiency: it provides just a single benefit for the two very different kinds of harm which a permanently disabled worker may suffer. I developed the argument for that premise in my first Report and there still seems to be widespread agreement on that score among business, labor and the three political parties (and, I might add, at the Workers' Compensation Board). Needless to say, consensus on this point has left ample room for disagreement about the content of a new benefit which might do a better job of compensating both types of loss inflicted by permanent partial disabilities.

2.

I shall begin with the issue of how to compensate for the harm inflicted by a permanent physical impairment on the worker's ability to function in and enjoy his normal everyday life. My initial proposal was a lump sum award for this harm, pegged at $40,000 for a total disability at the age of 40, but ranging upwards or downwards from that figure depending on whether the disability occurred earlier or later in the worker's life. It will be recalled that there were three recurring objections to this proposal: (i) the sum proposed was too low in comparison to the value of the current pension; (ii) it was unfair and discriminatory to have these amounts vary by the age of the victim: and (iii) it was wrong to deny workers a life pension for an injury which would endure for the rest of their lives.

Addressing these concerns in reverse order, the last poses no problem at all. My initial assumption was that a lump sum award would be preferred by injured workers in comparison to the receipt of periodic payments from the WCB. The representatives of injured workers have made it abundantly clear that I was wrong in that assumption. Fortunately, there is absolutely no difficulty in accommodating their point of view by altering the design of the award. A lump sum and a periodic pension can easily be made the precise financial equivalent of each other. The only difference is that instead of handing the capital sum over to the disabled worker, the Board would simply retain the money in its own investment portfolio and pay the proceeds to the worker on a monthly basis for the rest of his life.

Not only would such an amendment to my original proposal allay the symbolic concern about the loss of the existing lifetime pension, but it would provide two tangible benefits to its recipients. First, any one worker would actually collect the designated benefit for his own life span, rather than simply be given a lump sum which was calculated from the actuarial life expectancy of that entire category of workers (defined by age, sex or whatever). While these actuarial tables are accurate for the group of disabled workers, only by coincidence will the amounts paid match up precisely with the life and loss of any individual beneficiary. To achieve that matching, the worker would have to turn around and use the lump sum to buy an annuity from an insurance company. This is a needless and costly step if the Board can, in effect, provide this annuity for him.

Even more important, the real value of the benefit can more easily be preserved from erosion by inflation if the money is left in the reserves of the Board. True, the nominal interest rates upon a capital sum paid to the worker would normally reflect the expected rates of inflation. Thus, if the capital sum is calculated by means of a discount rate equal to real interest rates (probably 3% now in conservative investments), the additional interest earned by the worker would be available

to compensate for inflation. The problem, though, is that under current tax law this inflation premium within the interest actually earned would be taxed as though it were a real income gain, rather than just the preservation of the value of the original capital. This means that the disabled worker would have to invest his capital in considerably riskier instruments in order to earn the much larger rate of real return needed to offset this combination of inflation and taxation (and even that would be near impossible if inflation were to reach the double-digit levels of the late 70s and early 80s). By contrast, if the capital were left in the WCB's reserves, the interest which the Board would earn through its investments would be non-taxable. Then, when the Board paid the earnings out periodically in an inflation-adjusted pension, these amounts would also be nontaxable in the hands of the worker.

For these reasons, I now recommend that this award for non-economic harm for a permanent partial disability should presumptively be paid as a life pension. At the same time, I would allow an injured worker the option of taking this benefit in a lump sum (capitalized through a discount rate equivalent to real, not nominal, interest rates) if he or she feels that the advantages of having and using the capital now outweigh these longer-term virtues of the pension alternative.

With that alteration in the manner in which the benefit is paid, one also answers the objection to adjusting the lump sum by the worker's age at the time of disability. I confess to being somewhat puzzled at the criticism that my original proposal discriminated against older workers by paying someone who lost a leg at the age of 60, for instance, less than would be paid for someone who lost that same leg at the age of 20. My simple assumption was that the younger worker would experience this loss of his limb for a much longer period of time than the older one, and it would be unfair not to recognize that fact by paying greater compensation to the former: the courts, certainly, have always followed this principle in calculating tort damages. What leaves me especially bemused about this criticism, though, is that many of the same people who objected to this age-adjusted lump sum were also insisting that this benefit be paid as a life pension. The fact is, of course, that if the 20-year-old and the 60-year-old are each awarded the same monthly pension for the loss of a leg, the aggregate monetary value of such a benefit will be far greater to the former than the latter; the 20-year-old's pension will simply be paid for far more months than the 60-year-old's. Now that I propose that this benefit be paid as a pension rather than as a lump sum, this age-related feature of the benefit will follow automatically, and in a manner which no one can seriously challenge as discriminating on account of age. Needless to say, if the worker is also given an option to have the pension commuted into a lump sum, this would have to be done in accordance with standardized life expectancy tables at the relevant ages.

3.

No such easy resolution is available for the third concern – the appropriate amount of compensation for the non-economic harm of permanent physical impairments. The most widespread criticism of this side of my proposed dual award was that it was unfair to reduce the value of the existing life pension as my lump sum proposal clearly did (and would do so even if the latter were translated into a financially-equivalent life pension). Reflecting that viewpoint, the NDP proposal for compensating the non-economic harm was a pension calculated by applying the clinical rating to the average wage in the province: this would provide a physical impairment benefit which, on average, was about one-third more valuable than the existing life pension. For comparison purposes, if my lump sum ceiling was increased to $50,000 at the age of forty (to take some account of changing prices since 1980), this would translate into a pension of one-tenth the AIW for a permanent total disability (given an average provincial wage of about $25,000 and assuming a three percent discount rate). There is no doubt, then, that my version of the dual award does contemplate a physical impairment benefit substantially smaller than the existing life pension, let alone the new impairment pension proposed by the NDP.

There is no easy and obvious way to justify the selection of one monetary figure instead of another as the proper compensation for an inherently non-monetary harm (though I shall explain shortly the reasoning that underlies my selection). But I am convinced that the one method that cannot be justified is to use the value of the existing pension as the reference point. The reason is that this existing pension is the *only* PPD benefit, whereas a new pension for the non-economic harm would be just one part of a *dual* benefit in PPD cases. The other side of the dual award proposal would offer much more generous compensation to those disabled workers who suffer much more sizeable wage losses than are now reflected in their degree of physical impairment. But if one criticizes the current clinically-based pension in those cases for not serving its major

role of compensating for the lost earnings of disabled workers, logically one must also recognize that the current pension overcompensates those disabled workers who return to work with little or no wage loss, but receive a fully-indexed, lifetime pension nonetheless. It is my view, certainly, that the latter group do suffer real losses for which they should receive significant financial redress. But the only fair comparison between the *status quo* and a new dual award proposal (whether my version or anyone else's) is one which takes account of the value of the total protection afforded to all disabled workers by both sides of this new benefit. The major premise of this reform is that while some PPD victims will receive somewhat less than they would now, others will receive substantially more, and the latter are those who suffer the larger overall losses from their disability.

I find certain other comparisons to be much more plausible than this one with the value of existing pension. First, one can look at what other Canadian jurisdictions – those which have actually adopted the dual award model – have decided is the appropriate level of compensation for this one type of harm. The answers are that Saskatchewan has a maximum of $15,000, New Brunswick approximately $30,000, Newfoundland $45,000, and Quebec $37,500 (the latter being the mid-point of the $25,000 paid for disability suffered at age 65 and the $50,000 entitlement if the disability occurred at age 18). Thus, if Ontario took the figure I mentioned earlier, $50,000 for the 40-year-old (and adjusted up or down depending on the age of disability), this promises to provide the most generous such compensation anywhere in the country.

Some might respond that these other jurisdictions have simply been too ungenerous with their own disabled workers, and that Ontario must not feel constrained to follow that pattern. There is another point of reference within this province, though. Under the tort system, the maximum damage award for non-pecuniary harm from a permanent total disability is now something over $180,000 for the young victim. This means that the victim of a total disability occurring at or around the age of forty would obtain roughly $100,000 compensation for this kind of loss. (For comparison purposes, the NDP proposal would award a life pension at the age of 40 whose capitalized value would be in the order of $500,000.) In tort law, though, one obtains such an award only by suing another actor, proving that the latter was at fault and the victim was not, and then successfully collecting on this judgment from a defendant who has sufficient resources with which to pay. In actual practice, less than half the victims of serious motor vehicle accidents in Ontario recover any tort damages for their injuries, and the victims of other accidents (from consumer products, medical treatment, incidents in the home, or whatever) collect only a tiny fraction of the time. If one considers the prospective value, then, of the tort award for loss of enjoyment of life, by discounting its potential maximum size by the actual likelihood of recovery, the resulting figure is far less than $50,000.

No such discount is required for workplace injuries where compensation is guaranteed from a financially-responsible WCB without regard to the absence of fault by the employer or the presence of fault by the employee. (Nor can one ignore the fact that WC starts out by providing substantial guaranteed compensation for most financial losses, whereas recovery in tort for these even more vital items is also subject to the contingencies noted earlier.) What this means is that if an Ontario worker is injured on the job under a statute which promises up to $50,000 for non-economic injuries, he will enjoy considerably better protection for that harm than if he were injured on the job elsewhere in Canada or if he were injured on the highways of Ontario (perhaps driving to or from work); he will have far better protection than if he were injured at home or anywhere else in the province. I do not see what arguments can be made that this protection by WC should be made even more generous than that (though, as I said earlier, I would now express this benefit as a pension calculated as one-tenth the average industrial wage for a total disability).

4.

It is not enough just to decide what should be the maximum amount of compensation for the loss of enjoyment of one's non-working life from a totally disabling impairment. One must also have a method for judging the relative severity of different partial disabilities so as to be able to place a monetary value on each of them.

The standard method used in those Canadian jurisdictions which have moved to a dual award PPD benefit is to use the traditional rating schedule and procedures for this purpose. A medical judgment is made about the degree of physical impairment produced by the injury and this percentage figure is applied to the maximum award amount to calculate the lump sum to be paid for this particular disability. The decision to use the rating schedule for this novel purpose has

naturally led to a re-examination of the contemporary validity of the schedule. The Ontario Board engaged Professor John Burton of Cornell University, the leading authority on the subject of PPD compensation, to review this matter. I had the opportunity to discuss this issue with Professor Burton in the course of those deliberations and then to read his Report (a copy of which is attached as Appendix B). Since I agree with the basic thrust of his analysis and recommendations, I shall content myself with some brief observations on this one facet of the larger problem of PPD compensation.

As Professor Burton makes clear, one cannot appraise the validity of a rating schedule in the abstract. Everything depends on the context within which the schedule is to be used, the purpose for which these impairment judgments are being made, and the types of losses which are to be compensated by the PPD awards which are generated by the schedule. Under current Ontario law, the schedule is used to produce a life pension whose primary role is to compensate for the earnings lost due to the injury. I now propose a new dual PPD benefit under which wage losses would be compensated separately and directly. Under that model, the award produced by the schedule would be designed to compensate solely for the victim's loss of enjoyment of his non-working life. One would suppose, then, that this new role might require somewhat different criteria for rating the disability.

Indeed, one might even go further and dispense altogether with a schedule of physical impairments to determine the compensation for the non-economic consequences of a disabling injury; just as the wage loss model assumes that one should not use a schedule to fix the compensation for earnings losses. There is a difference in principle between the loss of a bodily part and the harmful impact that this has on one's functioning in day-to-day life. The point of a compensation program is to provide monetary redress for that latter loss or harm. While the immediate physical impairment certainly plays a major role in influencing the kind and amount of such loss, so also do a variety of other factors relating to the individual victim's situation, activities, interests and the like. To take a simple example, if one injured worker enjoys music and the other sports, and one suffers a serious impairment in the use of a hand and the other in his hearing, the actual loss of enjoyment of life will vary tremendously depending on which worker suffered which physical impairment. Given that fact, one could readily imagine a WC statute which simply empowered the Board to make judgments about how much loss of enjoyment of life had actually been produced by particular physical impairments suffered by different workers in their own circumstances. Indeed, that is the actual practice of the courts in assessing general damages in tort cases.

As I said earlier, no jurisdiction which has adopted the dual award model, whether in Canada or in the United States, has tried to emulate this judicial aspiration towards damage awards which are carefully tailored to the non-economic losses in each individual case. The problem is that the latter would require a meticulous presentation of a great many debatable features about each worker's personal situation, and then a broad discretion given to the Board to judge the significance of the physical impairment upon the worker's future lifestyle. There was no appetite at all in Ontario for the introduction of this feature of the tort system into the WC program. The consensus, instead, was that the Board should continue to use a rating schedule and procedure to determine the level of physical impairment; the latter would then serve as a proxy for the actual loss in enjoyment of life of the typical worker affected with such an impairment.

Even if we were to continue to use the scheduled impairment approach, it should be possible to improve somewhat on the content of the schedule that we now use. The most evident problem with the current schedule is that it is short, sparse and open-ended. Only a relatively few bodily impairments are specifically dealt with, even as to these the criteria for assessment are not spelled out in any detail, and the remaining impairments are left to the *ad hoc* judgments of Board doctors. In practice, this has generated much of the contention and litigation which was supposed to be avoided through use of an impairment schedule as a proxy for the harmful effects of disability on individual workers.

I agree with Professor Burton, then, that something like the American Medical Association schedule should be adopted by the Board. The AMA version is comprehensive in its coverage of just about every kind of physical impairment and it describes precisely how a doctor should go about testing and measuring the degree of impairment in particular cases. Hopefully, this instrument would allow the workers' own doctors around the province to make their own assessments of the level of impairment in the light of intelligible clinical criteria which had been

clearly communicated by the Board to them. These assessments could then be readily tested and replicated by the Board's doctors in its own adjudicative process.

Needless to say, any impairment schedule, including that of the AMA, contains more than just definitions and procedures for measuring physical impairments: it also fixes a set of percentages which would determine the size of financial compensation that will be paid to the workers suffering from a particular impairment. As it turns out the AMA numbers are largely in accord with the existing Ontario schedule which itself is in line with that in other Canadian jurisdictions. Thus no serious adjustment problem would be encountered in making the change I have suggested.

This does not imply that the AMA figures should be treated as sacrosanct and immutable. It is likely that the AMA has produced a highly reliable set of measurements of the nature and degree of physical handicaps implied by the variety of impairments suffered by workers. These are properly considered to be a matter of medical or clinical judgment. To the extent, though, that these ratings are translated into WC awards, a large ingredient of public policy inevitably intrudes, and other disciplines and inquiries become relevant.

The point of the exercise, recall, is to compensate a worker for the harmful impact on his daily life which flows, for example, from the loss of an arm or a deteriorated disc in his back. The impairment ratings are just a proxy for these harms. In historical practice, the ratings given to the loss of bodily extremities such as an arm or a leg tend to be in the 50% range, while those given for injuries to the back cluster around 25%. Perhaps these assessments of the relative personal impact of these two kinds of disability are still valid. Perhaps, though, they are not, given the many developments taking place in the treatment and rehabilitation of different physical handicaps. As Professor Burton points out, there is now very little systematic and usable knowledge on this subject. Certainly the Ontario Board cannot delay taking action on its schedule, let alone on the daily flow in its case load, while such research might or might not be done. I do believe, though, that it would be a good idea for the WCB, ideally in collaboration with other Canadian Boards, to begin to take a serious look at this problem. Perhaps it might start with this specific example of the comparative impact of these two kinds of injury on the enjoyment of life by the typical workers afflicted by each. When some serious research investigation of this problem has been completed, it might well turn out that a revision of their relative rankings in the impairment schedule would be warranted.

B. Compensation for Loss of Earnings

1.

Notwithstanding these important and ticklish questions, designing the part of a dual PPD benefit which would compensate for a worker's non-economic injury is a much less contentious task than figuring out what to do about his loss of earnings. At first blush, that might seem rather strange. Whatever the reasons one might give in favor of one figure over another, there is something arbitrary in the selection of a particular sum of money to give a disabled worker for the effect of, for example, the loss of a leg upon his enjoyment of life. While the money is clearly intended to be some consolation for the loss, at root the two simply are not commensurable. When one turns to the impact of this disability upon the worker's loss of earnings, the issues would seem nowhere near so problematic: all that WC has to do here is provide money compensation to replace the money lost in wages due to the injury. As can be seen, though, from my account in the first Part of this Report, in actual fact this has proved much the more difficult side of the PPD dilemma in workers' compensation.

The nub of the problem is deciding exactly what wages, if any, have been lost because of the injury rather than some other cause. One cannot calculate the appropriate amount of such a WC payment simply by comparing the disabled worker's pre-injury earnings with his current wages, because the latter can vary for any number of reasons besides the physical impairment. The vast majority of disabled workers do eventually return to work following their injury. If they remain fully employed at their previous real wage, there is no wage loss and thence no problem for a PPD system. But if they leave or lose their job and cannot find an equivalent replacement, the subsequent loss of wages will be the responsibility of a WC program not simply because it has taken place *after* the workplace injury, but only if it occurs *on account of* that injury. Quite often the impairment will in fact be the explanation for why the worker is unable to stay on the job, and

WC benefits should then be paid. On many other occasions, though, the disabled worker will either quit the job for personal reasons or be laid off for economic causes: he must then rely either on his own resources or upon such programs as unemployment insurance which are available to tide people over periods without work and wages. As I observed earlier, though, the fact that a PPD is permanent and enduring can cause any WC Board significant difficulties in disentangling the effects of current conditions in the economy or in the worker's life from the consequences of a workplace injury which occurred a long time ago.

Aggravating the problem for the wage loss component to WC is the fact that the presence of this benefit may itself become one of the causes of wage loss. The WC program in Ontario now replaces 90% of net wages lost as a result of injury, up to a ceiling of nearly $32,000 a year. This policy of nearly full replacement of lost earnings stands in marked contrast to other social insurance programs, such as unemployment insurance, which replace closer to 50% of lost wages. Many people defend the lower replacement ratios in these other programs on the grounds that there must be a sizeable differential between the income paid to people who work and that paid to those who do not work, in order to enhance the incentive of those who are on such support programs to go back to their jobs when they can. In my first Report, I argued against that position for WC on the grounds that it unfairly penalized those injured workers who could not go back to work because of their disability and who had been denied any right to sue in tort for full compensation for their injuries. But while I remain convinced that a 90% wage replacement rate is fair in principle, one cannot gainsay the incentive problems which it leaves. As I stated in my first Report:

> "Work has its psychological as well as its financial rewards. Many people like their job and the sense of self-confidence and independence which it provides. They feel sufficiently responsible to the community to leave the compensation rolls when they no longer need the benefit. But I do not have a romantic enough view of human nature to assume that this is true of everyone. Many of the jobs to which injured workers must return, or which they must find, are not very attractive. I have mentioned the pain, the personal disruption, and the retooling of skills which may confront the disabled worker. The fact that for every dollar earned from that effort, he must give up a guaranteed 90 cents in compensation benefits definitely presents an incentive problem which has to be faced."

The solution I proposed – one which is incorporated in the wage loss provisions in every Canadian jurisdiction which has accepted that concept – is that the injured worker must be *deemed* to have received the wages which he could have earned in another job which was suitable and available. The assumption is that this part of the worker's lost wages is really the product of his own choice about what to do in his own personal and economic situation and preferences. The loss is not truly attributable to the original injury and so the responsibility of workers' compensation. Again, though, many who will concede this principle will be greatly concerned about the practical implications of giving an administrative board the power to decide exactly *why* a disabled worker is not working, with his WC benefits riding on the verdict.

2.

In appraising the merits of the wage loss notion one must be fully cognizant of the difficulties that such a system would confront. That is why I have been careful to spell them out here. But in making up one's mind about what course of action to take, it is not enough to recognize that any particular step entails some such risk. The ultimate question has to be: "As compared with what?" We do not have the luxury of embracing any easy, smooth and ideal mechanism for compensating PPD cases. Every alternative has significant minuses as well as pluses. An intelligent appraisal must try to strike the right balance between the two. While I am now somewhat more impressed by the weight of the concerns about wage loss than I was when I wrote my first Report, I remain satisfied that this kind of benefit is much preferable to the *status quo*.

True, the current clinically-based pension does pose less administrative difficulty. A doctor merely has to examine the injured worker to discover the visible or testable level of physical impairment. The adjudicator then applies this clinical rating to the worker's pre-injury earnings to calculate the amount of the lifetime pension.

The trouble is that these administrative advantages are achieved at the sacrifice of the major substantive goal of WC benefits – the replacement of earnings lost as a result of an injury. The

clinical PPD pension badly fails the key equity test of channelling the bulk of the available funds to the workers who actually suffer substantial wage losses. It is now widely recognized that a particular type or level of physical impairment bears no consistent relationship with either the likelihood or amount of wage loss: the latter will turn as much on the kind of job the worker has held, the education and skills he has, the prospects for retraining and job mobility, and so on. In actual practice WC pensions tend to be paid in relatively small amounts to all disabled workers, most of whom are then experiencing little or no wage loss, while the few who do lose all or nearly all their earnings must make do with a pension that replaces only a fraction of this amount (typically less than 20%).

It is true, as I related earlier, that this existing PPD system in Ontario has undergone a major change in the last five or six years. The WCB is now spending twice as much money per year on PPD cases as it was in the late 70s. As one would surmise, this has eased somewhat the pressures for reform which existed when I wrote my first Report in 1980. The problem is that the infusion of these hundreds of millions of additional WC dollars has not been targeted at this specific group of disabled workers who suffer the most serious economic consequences from their injuries. Instead, the trend has been to modestly increase the level of clinical rating for those kinds of physical impairments which were obtaining awards in the late 70s (whether a wage loss ensued or not), while using the bulk of the new money to add to the PPD rolls thousands of new pensions for disabilities which would not likely have received an award in the earlier era. This important *economic* transformation of the PPD benefit has done very little, then, to address the key *equitable* flaw in the clinical pension.

3.

Even if one grants that unfavorable verdict about the *status quo*, this still does not make the positive case for wage loss. There might well be another possibility more attractive than either of these. Two such options emerged on the agenda in the 1984 Report of the Select Committee; in particular, in the dissenting views of the Liberal and NDP members.

The thrust of the "double award" proposed by the NDP was quite simple. First, the existing clinically-based pension should be preserved intact for those who might benefit from it. Actually, the wage base for the calculation of the pension would be changed from each individual's own wage to the average wage in the province. This would eliminate the inequity of paying two workers with the same physical impairment varying amounts of compensation for that loss, just because their pre-injury earnings happen to be different. (Whether intended or not, that move to gross average earnings would also raise the overall value of this benefit by one-third over the present pension which is calculated as 90% of net, after-tax actual earnings). Superimposed on that benefit for the physical loss would be another benefit designed to provide full compensation to those who suffer economic losses. The tacit assumption, I take it, is that whatever the difficulties in estimating earnings losses, disabled workers could really lodge no objection to this reform because they would be losing no rights they now enjoy under the present Act, and many would likely gain considerable help from the addition of this new benefit.

Of course, what looks like an advantage from the point of view of those who would benefit from this new and more generous PPD regime is likely to be the source of concern on the part of those who must pay for it. Duplication of disability benefits would be very expensive. I shall review in detail the issue of how to cost PPD reforms near the end of this Report. Suffice it to say for now that whereas the current PPD system cost about $550 million in awards made in 1985, the proposed "double award" would have cost more than twice that figure – e.g., $1.2 billion a year if one assumes 25% overall wage loss among the population of PPD recipients. And recall that the cost of the current program had itself risen dramatically from the less than $300 million spent by Ontario in 1979 and still being spent by Quebec in 1985. I do not mean to imply that the prospect of some cost increases must hamstring the effort to design a fair and decent WC benefit system (the "dual award" I proposed would cost an estimated $635 million in 1985 at a hypothetical 25% wage loss, versus the $550 million for the current program and the $600 million the latter would have cost if fully indexed). But I simply do not fathom what case can be made for a leap of that magnitude in the amount of money which the Ontario economy would have to spend on PPD claims arising out of workplace injuries. Even if the province were ready to spend another $600 million compensating the victims of disabling injuries, I suspect that Ontario workers (out of whose pockets most of that money will ultimately come) would prefer to see it spent to provide

just a limited amount of compensation for the much more numerous injuries occurring in other parts of their lives, i.e., in the home, in hospitals, in recreation and other situations where they now enjoy little or no effective redress.

4.

The Liberal "blended award" proposal, by contrast, embodies a novel and intriguing variant on both the existing program and the several versions of the dual award alternative. It would continue to pay the worker a lifetime pension, based on a clinical rating, to compensate for his physical impairment. Since this rating would be applied to one-half the average industrial wage, the overall value of this benefit would be about two-thirds the current pension. Then those disabled workers who suffered wage losses which were higher than the amount of this pension would have the basic entitlement topped off sufficiently to compensate for their larger-than-usual earnings loss.

This proposal does go with the grain of the current program: the Board now supplements the basic clinical pension with payments for additional wage losses. While S.45(5) supplements were originally designed for and used as short-term support during vocational rehabilitation, they have gradually been extended in scope (e.g., for workers over 55, at least to the level of early payment of their old age pension) and duration (with the periods fixed for payment rising from three months to six months and now to twelve months, with a good chance at renewal for another twelve months if a job has not been found). A blended award would simply lift these restrictions from the supplements and create a legal entitlement to compensation for all wage loss over and above the basic pension. Every injured worker who would have received a fixed pension under the current law would continue to enjoy this right under a new law. Any difficulties with administering wage loss would be felt only above the level of this basic entitlement. At the same time, this proposal does recognize that there must be some redistribution of the existing pie among PPD claimants, rather than just stacking a costly new benefit on top of the existing (and also costly) regime. Thus the value of the current clinical pension is reduced roughly one-third by applying it to half the average industrial wage: this frees up some funds to pay for the extra wage loss benefit.

This is an intriguing concept, one which I had not thought of when I wrote my Report, and which I believe has some considerable attractions. It is an idea which will have to be taken seriously on its own merits, even ignoring the fact that the Liberal party which devised it in opposition is now the government in power. Having reflected on this option, though, I do have some reservations which I will spell out for the Government to consider.

First, even given some degree of redistribution in the way the current money is paid in PPD cases, this proposal would cost substantially more money: an estimated $900 million in 1985, at 25% wage loss. While that figure might paic by comparison with the $1.2 billion cost of the double award, it is fully $350 million more than the present program and $265 million more than the dual award system I have advocated.

Second, in deciding whether it is a good idea to incur those additional costs, one must recognize that there will remain a significant inequity in the operation of this single blended benefit, at least when measured against the theory of a dual award. Recall the example I gave earlier of an office worker and a construction worker who each lose a leg in a workplace accident. Assuming the same 50% clinical rating were made of the physical impairment, each would receive a pension of $6,250 (a 50% rating applied to one-half the average industrial wage of $25,000). However, while the loss of this leg would not likely affect the employment and earnings of the office worker, it might well cause a net loss of earnings to the construction worker of $10,000 or more. True, the blended award would top up the $6,250 pension to replace all $10,000 in lost income. However, that compensation for the wage loss is secured only by using, dollar for dollar, the entire pension which had already been awarded for the loss of enjoyment of life due to the physical impairment. Thus, even though the construction worker is receiving more money than the office worker ($10,000 versus $6,250), he is actually being undercompensated by comparison, because he has suffered two different kinds of harm but will receive compensation for only one of them.

I recognize, of course, that the reason why one might seek to retain the present clinical pension at most of its current value is the problem perceived in fairly administering a wage loss system. One hopes that retention of a basic physical impairment pension will defuse the unhappiness to be experienced by those workers who might become entangled in contentious wage loss cases. A final difficulty I have with the blended award, then, is that it does not really resolve these

problems with the wage loss benefit: the proposal actually retains this concept as a key part of its PPD compensation. Granted, the basic clinical pension would be much higher than the one I recommended. In real life, though, the trouble cases for a wage loss system will be the worker with a back problem, for whom the clinical rating will be in the 15 to 20% range – thus generating a pension of about 10 to 15% of pre-injury earnings under this proposal – but whose wage loss is at or near 100%. If the challenge to wage loss is to decide whether all these wages have actually been lost as a result of the back injury instead of some other unrelated cause, that challenge is going to be just as difficult when the contest is about payment of 80 to 90% of the pre-injury income as it is when the entire 100% is at issue.

5.

There is, however, quite a different way of measuring the wage loss from a permanent partial disability, a way which is responsive to that last argument. Suppose we state that the real aim of workers' compensation here is to compensate for the impairment of *earnings capacity* stemming from the workplace injury. While a calculation of the wages lost due to the disability, done after the fact (or *ex post*), may be the most precise way of measuring this harm to the worker's earnings capacity, it is also possible to estimate these future wage losses before the fact (or *ex ante*), in order to judge the degree of impairment in earning power. Not only is this possible, but it is what the courts actually do when they try to calculate the damages which are to be included in a single, once-and-for-all tort award. Though the WCB pays its benefit out in a periodic lifetime pension rather than a capital sum, there is no reason why it could not emulate the judicial process and fix the amount of this pension through a one-time projection of the likely earnings loss of the individual claimant (making this decision as of the time that medical and vocational rehabilitation has been fully completed). Though its language is not crystal-clear on this point, I take it that this was the meaning of the recommendation made by the NDP members of the Select Committee regarding the second limb of their dual PPD award.

There are two different ways in which to determine such impairment of earnings capacity. One is the procedure developed in British Columbia in the early 70s, under the chairmanship of Professor Terence Ison. The B.C. Board assigns a couple of seasoned adjudicators to these cases: they make intuitive judgments, based on the experience they have gained over the years, about the impact of certain disabilities upon the earnings of different kinds of employees. In this way, a prediction is made about the worker's likely average loss of earnings during the rest of his life and a pension is calculated and awarded to compensate for that loss. In fact, the British Columbia Board also calculates a fixed, physical impairment pension based on a clinical rating of the disability, and then pays the worker the higher of the two: this single, *alternative* award approach to PPD cases was as far as that Board could go, given the wording in the British Columbia legislation. But this approach could fit just as comfortably into a *dual* award PPD benefit, under which anticipated earnings loss would be estimated before the fact and compensation determined on that footing.

The State of California utilizes quite a different approach to the same end. That State has developed a Schedule which starts with the type and degree of physical impairment, but does not end there. Everyone now realizes that the economic impact of a given physical injury will vary with the age and job of the worker in question. The occupational significance of the loss of a leg to a laborer is far different than it is for an office worker, while the possibilities for retraining are far greater for a 25-year-old than a 55-year-old laborer. California's Schedule is a very detailed and complex typology of the interaction of all three of these variables – physical impairment, occupation and age – stating what level of pension is appropriate for any given combination of the three of these. Thus the California approach is clearly intended to award compensation for the loss of earnings capacity rather than just physical impairment, but it does so through an elaborate formula which constrains the broad discretion delegated to the adjudicators in British Columbia.

In writing my first Report, I did consider this alternative approach, one which was pressed on me by Professor Ison when he did an analysis of this issue for me. Its virtues are evident. On the one hand, we would maintain all the administrative advantages of the fixed pension. The Board would have to make only a single determination of earnings loss in each case; the disabled worker would be relieved of the intrusiveness and insecurity of having to document his actual wage loss periodically; the prospect of near-full compensation if, and only if, there was actual wage loss would no longer affect the worker's incentive to reduce such wage loss. On the other hand, the vices of the current fixed clinical pension – that it focusses just on physical impairment which

bears only an accidental relation to the economic loss for which the pension is trying to compensate – will be avoided, because the fixed pension would actually be based on estimated loss of earnings (whether this estimate was made about the particular facts of each case, as in British Columbia, or in the construction of a sophisticated Schedule, as in California).

Unhappily, it is not really possible for us to "have our cake and eat it too!" The *ex ante*, projected economic loss approach does do a considerably better job than the clinical rating of physical impairment in matching up benefits paid with wage losses actually suffered. However it falls a good distance short in attaining that ideal. Research done in California demonstrates that, notwithstanding the account taken in its Schedule of these other important variables influencing earnings loss, there simply are too many other factors operating in individual cases to permit that Schedule to provide anything near an equitable distribution of compensation in accordance with actual wage loss.

There has been no comparable research about the British Columbia experience, which on its face does permit the Board to take account of the entire range of causes affecting future earnings. However, I have had several lengthy conversations with the officials and adjudicators of that Board about their approach: they all expressed, in no uncertain terms, their own misgivings about the inaccuracy and unfairness of some of the fixed awards they had made, based on their long-term projections of lost earnings in particular cases. There simply are too many unforeseen contingencies in the individual's own life, in the operation of different sectors of the economy, in the development of new techniques for physical and vocational rehabilitation, to place much confidence in a prediction of what wage losses might be experienced at the age of 55 by a worker disabled at the age of 25. The British Columbia people have always wanted to have the authority to revise periodically their predictions, and thence their pensions, after some period of time has elapsed. Now that the B.C. WCB has decided to undertake some such reviews in light of the wages actually earned during the intervening period, that province also accepts some element of the variable, *ex post*, wage loss benefit.

Besides this basic inherent limitation upon the accuracy of the predicted future earnings losses, I was also conscious of two other shortcomings of this alternative to the wage loss proposal:

1. One persistent concern about wage loss was the degree of discretion which would be conferred on the WCB to make decisions about whether any given wage loss is actually attributable to the injury rather than to other causes (including, perhaps, the worker's refusal to find and accept suitable and available employment). To the extent there is reason to believe that an administrative tribunal may be prone to error in the judgments it makes under such a broad statutory power, surely that should be a source of even greater concern about the "projected earnings loss" approach in which the pension is set once-and-for-all. In the "actual earnings loss" system, at least the disabled worker will have a chance in his next periodic review to point out the initial error and to have his benefit revised accordingly.

2. Another recurring objection to the wage loss system concerned the way in which a promise of near full compensation for lost wages might detract from the disabled worker's incentive to seek and keep alternative jobs, since the wages for these jobs would reduce, dollar for dollar, the benefit otherwise payable by the WCB. That was and is a major concern to me. It was the reason for the elaborate set of directives to both the worker and his employer to find and to provide suitable and available employment that might reduce the payments the Board must make. But one cannot ignore the other side of this coin. A projected wage loss benefit will also influence, and perhaps distort, the decisions made at or around the time when the pension is to be set for the future. Because the long-term payoff in the value of the pension is so great at this, the most crucial stage in the vocational rehabilitation efforts of all parties, there is likely to be far more incentive for each side to "jockey" for a favorable position here. One can imagine, for example, that an employer might bring a disabled worker back into an apparently permanent new job in order to reduce the size of the earnings impairment pension. However, once the pension was set and awarded by the Board, the employer could then look for an opportunity to weed out this disabled worker and replace him with an able-bodied person, with the employer realizing that its liability under that lower pension benefit could no longer be affected.

I do not mean to suggest that any more than a handful of Ontario employers would wilfully manipulate the statutory benefit in that manner, no more than I would suggest that any more than a handful of PPD recipients would wilfully malinger because they were receiving full wage loss benefits. In a typical case, the actual situation and motivation will be much more complicated

than that. The design of a PPD benefit can do no more than affect incentives at a margin which is influenced by a host of other variables. The point I do want to emphasize, though, is that what an *ex ante* PPD benefit gains in maximizing the incentives of the worker to look for other jobs (because he gets paid his WC benefit anyway), it thereby loses in enhancing the incentives of the employer to utilize its disabled employees in its operations (because the Board, and thence the experience-rated employer, will have to pay for that same WC benefit anyway).

6.

Having underlined the limitations and weaknesses of the *ex ante* method for determining loss of earnings capacity, I must immediately acknowledge that the *ex post* approach also has important deficiencies: indeed the strengths and weaknesses of the two are largely mirror images of each other. As I said earlier, I eventually came down in my first Report in favor of the *ex post* approach "not as the ideal, but as the least unattractive of the available options." Since that time, my own sentiments have actually moved somewhat nearer to the *ex ante* alternative. Certainly there is a closer case between the two than I supposed six years ago. There are at least these three reasons for that movement in my own views.

One important reason is the level of antipathy to wage loss in Ontario. I was not surprised that people would feel concerned and uneasy about that path: it does present some real problems. I am surprised, though, at the intensity of these feelings, at the near paranoia about wage loss exhibited by representatives of injured worker groups. In particular, I have been struck by the unwillingness of the participants in the Ontario debate to look closely at the actual experience of wage loss in other Canadian jurisdictions which have dealt pretty fairly and effectively with the admitted problems that any such system will encounter. However valid and invalid are the arguments made, though, the negative feelings in Ontario about wage loss are certainly genuine. Unless they can be allayed somewhat, any government will be loath to force this new benefit upon Ontario workers just because Saskatchewan and New Brunswick unions and worker groups seem to like it, and because their Quebec counterparts actively sought it last year.

The above factor adds a negative to the appraisal of the *ex post* actual wage loss approach. The next two factors provide some response to the major argument against the *ex ante* projected wage loss alternative: that the prediction of long-term wage losses is inevitably inaccurate, thus producing an inequitable distribution in benefits as compared with losses.

Over the last number of years, the Board has been gradually lengthening the time before a permanent (PPD) pension is awarded. In serious and difficult cases, it is quite common for this decision to be postponed for three or four years. During the interim, the injured worker will be receiving temporary (TD) benefits which are paid on an actual wage loss basis (and, as I said earlier, even after a permanent clinical pension is awarded, a S.45(5) supplement is paid in a good many PPD cases, with the result that the latter group continues to draw a full wage loss benefit for another year or so.) My review of some research which has been done on this subject, and my conversations with specialists in this field, satisfies me that a good deal of the variation in the job and earnings experience of disabled workers takes place in this initial period following the injury and the medical recuperation. If that be true, then, one could reduce a considerable part of the risk of error in projecting future wage loss under an *ex ante* system simply by postponing this crucial decision until ample time has been left for vocational rehabilitation and initial post-injury employment: at that point the Board would be in a more informed position to set an accurate earnings loss pension.

There will remain, though, a substantial risk of error in these predictions of wage loss, especially for younger disabled workers whose future careers are much longer and more uncertain. Nor can one solve this problem just by postponing the date of decision until the picture has become perfectly clear. In the interim, the injured worker would be drawing benefits on an actual wage loss basis (as is true under the current scheme with TD or PPD/supplement payments): thus the longer one delays the pension decision, the less one has of an *ex ante* program and the more one is really using the *ex post* approach, for better or for worse. If one is serious about the projected wage loss model and wants to have these decisions made within a reasonable time frame, the question is whether one can devise a program for reducing the risk of error in these judgments. I now believe that there is a possible method for estimating earnings loss, one which fits somewhere in between the entirely open-ended, intuitive approach in British Columbia and the elaborate but quite rigid formulae in California.

At my suggestion and with the help of Professor William Johnson, one of the leading scholarly authorities on the economic impact of disability injuries, the Ontario Board has been carrying out a detailed analysis of a sample of the recipients of its S.45(5) supplements, the group of PPD cases which experiences just about all the wage loss produced by workplace disabilities. One purpose of this research is to try to discover all the factors which are associated with wage loss – not just type and kind of physical impairment, but age, gender, language, occupation, education, training, industry, region, level of economic activity and unemployment, and so on. Through econometric analysis one can isolate the statistical difference which is made by each such factor upon the likelihood of wage loss, all other factors being held constant. If one takes the values for all such factors and applies them to a particular case, one should then be able to make a much more reliable prediction of what will be the likely earnings loss experienced by this worker in the future. (I do not mean to suggest that a Board adjudicator should remain bound by the result generated by these statistical values: some room should and will be left for an appraisal of any distinctive features in the individual case.) As well, if the Board were to move to an *ex ante* method of estimating wage loss, it would be in a position to regularly update this research by following up on future samples of pensioners to discover whether the projections had been accurate or not: if they had not been accurate, the formulae would be revised, new factors included, and so on. (And assuming this research were done within an *ex ante* kind of PPD program, there would be no effect on the fixed pension of those whose employment experience was being tracked, and thus no reason for anyone to worry about the personal consequences of this research.)

7.

For the reasons I have given I now believe that the case for a projected wage loss model is somewhat stronger than it was when I originally came down in favor of the actual wage loss approach in my first Report. Having said that, I am still not persuaded that Ontario should wholeheartedly embrace the *ex ante* model as the NDP has suggested.

First, we cannot simply ignore the experience in other Canadian provinces: British Columbia, the home of projected wage loss, where the Board has sought to move closer to an actual wage loss system, and Newfoundland, New Brunswick and Quebec whose legislatures all deliberately chose to follow Saskatchewan's lead along that latter path. As well, while one can imagine ways of doing the wage loss projections more fully and accurately (along the lines I sketched in the previous Section), these methods are simply speculative at this stage. A great deal of work remains to be done to make them even close to operational. Indeed, it seems to me more sensible for a province to begin with the actual wage loss approach. On the basis of the knowledge thereby obtained about the actual experience of disabled workers in its own labor market, the WCB could then develop the criteria through which it might confidently make informed projections of wage loss where these appeared feasible.

The more general implication of that last point is that, rather than view the *ex post* and *ex ante* approaches as mutually exclusive alternatives, Ontario should try to devise a hybrid system for compensating the earnings losses of disabled workers, a system which would blend the best features of the two (just as the dual award is itself a hybrid benefit that compensates both physical impairment and economic loss from PPD). My own views have moved in that direction partly as a result of seeing the writings of and having conversations with Professor John Burton, who has been analyzing this issue for the last decade. While Burton has always been candid about the problems with the actual wage loss approach, his detailed empirical research has demonstrated the considerable degree of inaccuracy and inequity in the attempt to project long-term wage losses in those states employing the *ex ante* model. Having forthrightly rejected the latter option, Burton's own proposal to compensate actual wage loss incorporates a variety of ingredients from the *ex ante* model, so as to make the ultimate product more a blend of the two. (This can be seen by comparing the provision in Florida, much more a pure wage loss state, with that in Massachusetts, which largely adopted Burton's ideas in its workers' compensation reform of 1985). Because American WC programs deal with permanent disabilities in a manner which differs substantially from Canada's, it is impossible to apply the Burton hybrid directly in Ontario. But his underlying theme is definitely reflected in the specific proposals I will now offer.

8.

In the previous sections, I have analyzed the pros and cons of the alternative approaches to compensating the earnings losses of permanently partially disabled workers. I shall now state the principles which Ontario should follow in reshaping this feature of its WC law.

1. The starting point must be a serious effort to relate the compensation paid to the wage losses actually suffered. That would not constitute such a sharp break with the current method of paying for all disabling injuries. An injured worker is now paid actual wage loss benefits during the period of temporary disability, while he is receiving medical treatment and then recuperating from his injuries. If he is able to return to part-time or limited employment, he will receive partial wage loss benefits for this period. Even after the stage of "maximum medical improvement" has been reached, leaving a permanent physical impairment for which a clinical pension is awarded, the Board now supplements this pension to make up all wages lost while the worker is undergoing retraining and looking for another job. It is not at all uncommon, then, for this supposedly "temporary" period of compensating actual wage loss through TD benefits and by S.45(5) supplements to last for five years or even longer. If Ontario were to move to an actual wage loss system, this change would involve only the lifting of this one outer limit on the duration of this kind of compensation for these economic effects of the workplace injury. I would maintain a number of constraints upon the effort to measure and compensate actual wage loss (the most important such limitation being the age of 65 when retirement benefits would kick in). But the mere fact that the injury now appeared to have left a *permanent* disability would no longer be decisive in that regard.

2. Having once determined the actual wage loss produced by the residual disability which remains after medical and vocational rehabilitation has been completed, I would pay that benefit amount for a significant period of time – probably three years. This means that the Board would not try to continually monitor the actual wages earned or lost and immediately adjust the benefits being paid. Fixing the level of benefits for a definite period of time would enhance the disabled worker's sense of security and his financial privacy. It would also provide ample incentive for him to look for and stay in a job during this crucial period in his working career following the injury (because the worker will keep all the additional money he is able to earn during that period). True, this will result in some degree of "extra" compensation in these cases. However, such an expenditure would likely prove a wise investment by the Board in reducing the long-term costs of PPD compensation. Once the worker was fully and visibly ensconced in that job, the prospect of returning to the WC rolls should exert only a marginal disincentive effect thereafter.

3. Unlike the *ex ante* approach, though, this benefit level would not be set for a lifetime, but rather just for three years. If the Board is empowered to come back in at that time and take another look at the actual wage loss, this should reduce sharply the risk of error in long-term predictions of the work and earnings in any individual PPD case.

I do not envision a highly intrusive procedure for this purpose. As the three-year anniversary of the initial award approaches, the worker will be asked to fill out and attest to a questionnaire describing his work and earnings history, with supporting documentation attached. This would be no more burdensome a requirement than we now impose on all workers in filling out their income tax returns. I also hope that the Board will be able to rely on something like the income tax auditing procedure: the reliability of the disabled worker's return would be presumptively accepted, but every year a certain number would be audited to insure their accuracy. On the basis of the information thus obtained the Board would then adjust the PPD benefit up or down for the next three years. In making these benefit adjustments, it goes without saying that the Board would determine whether there had been a *real*, not just a *nominal*, wage loss. That means that the worker's current wages would be compared with his pre-disability earnings adjusted upwards to take account of intervening inflation.

4. An important administrative limitation should be part of this system. The Board would adjust a disabled worker's benefits payments only if the variation in the earnings lost due to his disability was greater than some minimum cutoff point – perhaps 20%. That means that if the worker's earnings changed only slightly – e.g., a 10% increase or a 5% drop – the earlier pension benefit would remain unaltered for the next three years. While this is a significant qualification to the pure wage loss principle, it is a necessary and justifiable one. The Board now has 100,000 active pensioners on its rolls, a number that is rising by several thousand every year. True, a large

majority of these would not receive wage loss benefits (because they are fully employed or older than 65), but that still leaves a large absolute number who would do so. Even with a three-year (as opposed to a one-year) review procedure, there will be several thousand wage loss cases for the Board to scrutinize every year. Simple logistics suggest that we should try to reduce these numbers as much as we can, from the point of view of both the disabled workers and the administrators involved.

As well, while requiring a minimum 20% change in wage loss might seem to entail some sacrifice in the precise accuracy of this benefit, there is something of an illusion in that. Recall that wage losses are to be compensable only if they are attributable to the workplace disability, as opposed to all the other factors operating in the worker's life. There will always be some doubt about the true source of any changes in earnings, and that doubt will be especially pronounced in cases where the change is a modest one: almost always a variation of less than 20% in earnings would be the result of a change in the level of pay, not a total shift in status from employed to unemployed, or *vice versa*. The point of this cutoff point, then, is not just to ease the aggregate burden of administering a wage loss system, but also to screen out those cases where the Board's ability to make these causal judgments is weakest and where the payoff from trying to do so is lowest.

5. While this would be the basic statutory framework for compensating earnings losses, I would *empower* (as opposed to *mandate*) the Board to fix a pension on the basis of estimated earnings loss in particular types of cases where this appears appropriate. (Those who are concerned about the restraint of administrative discretion could limit the exercise of such authority to categories of cases specified by formal regulation.) Take an older worker, for example, who was injured at the age of 50, started receiving PPD wage loss benefits at 53, and has experienced no appreciable change in wage loss in the reviews at ages 56 and 59. At that latter stage, it would appear only sensible to conclude that this worker's situation has stabilized sufficiently that the Board can now settle the benefit at the existing amount and relieve everyone of the need for future reviews. More generally, the Board should be invited to build on its experience and analysis of a large number of PPD cases to try to develop presumptive criteria for projecting levels of wage loss in certain types of situations (whether these criteria be expressed in terms of injury, age, job, or whatever). Again, the lesson I have learned from wrestling with this issue for the last several years is that rather than put ourselves to an absolute choice between the *ex post*, actual wage loss and the *ex ante*, projected wage loss alternatives, we should utilize the advantages of each in the settings for which they are best suited.

6. Giving the Board such an authority to settle certain wage loss cases once-and-for-all would be especially useful in dealing with one trouble spot in a pure wage loss system. Suppose an immigrant worker is injured in an Ontario workplace, perhaps suffering a back problem as a result of years of construction labor. Under the current legislation, when that worker receives a fixed pension, based, for example, on a 20% clinical rating, he is then free to return to his original homeland if he wants to, with full entitlement to draw that pension. Under a wage loss system this same worker might well be entitled to benefits of 50, 60 or even 100% of his pre-injury earnings, but only if he satisfies a number of statutory conditions and Board policies to remain eligible for these more generous payments. It is possible, as Quebec proposes to do, to contract with the workers' compensation tribunals in countries like Italy and Portugal to have them do the monitoring and reviewing entailed by a wage loss WC program. While that procedure may well be necessary, it will hardly be ideal. A much more satisfactory resolution for the Board and the worker (and also the employer who has a significant interest in this question, especially in an experience-rated WC system) would be to settle the pension at a fair estimate of the average wage loss experienced by workers in Ontario in cases like these, and let the individual emigrate back to his home country with a guarantee of just that limited benefit. The point, again, is that the statute should give the Board the leeway to make sensible compromises for the exceptional cases which will never fit comfortably into the pure wage loss mold.

9.

The foregoing problem of how to measure and pay for lost wages is the central issue which will have to be confronted if the Province is to move to a dual PPD benefit, one element of which would be compensation for lost earnings. That is why I have canvassed this issue in such detail.

There are several additional aspects to the wage loss approach which I will just briefly mention here.

Whether earnings losses are to be determined on an *ex ante* or *ex post* basis, or some hybrid of the two procedures, it seems logically to follow that as of the date of anticipated retirement from employment, the WC program should then replace lost *pension* income, not supposed lost *wages* which would not have been earned even if the worker had never been injured. I also believe that if one is trying to determine the actual economic harms which a worker has suffered from a disabling injury, one must take account not just of the earnings lost from work, but also of other benefits which are actually paid to the worker to compensate for these: in particular, the disability benefits which are paid under the Canada Pension Plan on account of this injury. I realize that both of these positions are controversial. My own reasons were elaborated in detail in my earlier reports, my views have not changed since then, and I have nothing more to add to the debate on these problems (except perhaps to add that they are quite important, if only because adoption of a dual award PPD benefit without these two qualifications would cost an additional $100 million and more a year).

A final issue is presented by the *ex post*, actual wage loss model. If the law is to guarantee that it will regularly make up to a disabled worker all the wages he loses, it will also have to empower the Board to *deem* that the worker has earned the wages he would have derived from other jobs which are suitable to his condition and his abilities, and which are potentially available to him. There is little argument in Ontario that an actual wage loss model required such a provision: those who objected in principle to the notion of "deeming" found this to be a major reason for advocating the projected wage loss approach instead (under which it would not matter what the worker did with his time after the once-and-for-all award for loss of earnings capacity had been made). Among the proponents of actual wage loss, though, there remained a significant issue about how to define the circumstances in which deeming would be undertaken. This is a matter which was canvassed at length in front of the Select Committee of the Legislature, with extensive comments from me in my testimony. Thus I will not dwell on the problem here, since it becomes relevant only if and when a decision is made to adopt the actual wage loss approach.

I would add, though, that subsequent to the debate in Ontario, the Province of Quebec has actually enacted a wage loss model with a deeming provision whose wording I find appealing. If a disabled worker remains unemployed in Quebec more than a year after his medical and vocational rehabilitation, he shall be deemed to have earned wages from, and only from, "appropriate employment that allows [the] worker who has suffered an employment injury to use his remaining ability and his vocational qualifications, that he has a reasonable chance of obtaining, and the working conditions of which do not endanger [his] health, safety and physical well-being . . . considering his injury." Of all the statutory formulae for this admittedly difficult question, Quebec's seems to me to be the most responsive to all the competing concerns.

A final problem I must address is the potential cost of the new PPD benefit structure which I am proposing. As I have noted a couple of times, I do not believe that cost should ultimately be the decisive factor in determining the nature and dimensions of WC benefits. Once a workplace injury has occurred, inflicting a permanent disability, the economic consequences of the disability will have to be borne by someone: either the WC system, or some other public or private program, or the individual worker and his family. The first and most important question, then, is what is the fair and equitable way of handling these real costs of workplace injuries. However, I am realist enough to recognize that whatever the abstract merits of a particular proposal, it is likely to encounter considerable problems of acceptability within the business community if it does not appear financially feasible. Indeed, in the debate about the White Paper proposals before the Select Committee, the absence of useful estimates of the cost of wage loss made Ontario employers nearly as edgy about the idea as were Ontario injured worker groups. As part of this second look at the PPD issue, then, I did have some further analysis done of this facet of the problem.

C. The Cost of Reform

1.

I must be candid at the outset in stating that one will never be able to have a precise measurement of the financial implications of PPD reform. One can be fairly accurate with respect to the physical impairment benefit: the Board can derive from its files the number of PPD victims and their physical impairment ratings, and then calculate the total cost of the awards which would be made for these impairments under the new system (at whatever monetary value is fixed for this benefit). Such a simple procedure is not available, though, for the wage loss side of a dual PPD benefit. First, the Ontario Board does not have on record the actual wages lost by its PPD recipients: that information is simply not relevant under the current clinical award procedure. Second, even if that information had been regularly accumulated under the present Act, it could not properly be transposed into a new statutory setting which now included direct compensation for wage loss. The reason is that the presence of such a wage loss benefit in the statute is likely to influence the actual amount of wage loss experienced in the future.

In my view, neither the direction nor the size of that influence is readily predictable. Many people would naturally assume that a statutory promise of full wage loss protection to those who could not work because of their disability would induce some physically impaired workers not to work as much as they could and did before such a statute was passed; nor could such a temptation be entirely avoided by the WCB's administration of the "deeming" provision. Given that premise, the amount of lost wages experienced under a new Act would likely be greater than before. On the other hand, if the statute required that all wages lost due to the injury be compensated, initially by the Board and thence by employers (particularly by experienced-rated individual firms), this would provide a stronger financial incentive to the latter to find and/or provide greater work opportunities for PPD victims. To the extent this latter influence were effective, the degree of wage loss expected under the new system would decline. There is no easy way to decide which of these two contrary motives will be stronger or whether the two factors might largely offset each other (in the aggregate, if not in individual cases). Thus one must be cautious in extrapolating into the future of a new PPD program the financial experience from the past.

2.

Having said that, one has to begin somewhere if one is to try to make even approximate estimates of the costs of the new proposals. With the caveat stated above, I have assumed that aggregate wage loss would remain roughly the same after as before. On that assumption, I asked the Board's Actuarial Branch to make some *hypothetical* estimates of the comparative costs of different PPD benefit structures. These estimates are set out in Table 2. (I caution that because those estimates were made in accordance with criteria specified by me, they should not be taken to be official Board estimates of the *actual* costs of alternative reforms. The key actuarial assumptions underlying Table 2 are set out in Appendix D.)

The first step in an analysis of the financial implications of PPD reform is to calculate the actual cost of the current program. That is not such a simple task, because we are concerned with the total cost of awards which are made in a particular year, the benefits for which will be paid out over the lifetime of the disabled workers in dollar amounts that are to be adjusted for future inflation. The procedure of the WCB actuaries is to discount the current nominal dollar amounts which are to be paid out over the actuarial life expectancy of pensioners to a present capital value through the use of a 2% discount rate. (Use of such a "real" discount rate adjusts for future inflation by assuming that the Board's interest earnings on its reserves for pensions will include a sufficient inflation premium to pay for the inflation protection of future benefit payments.) When that exercise was undertaken for 1985 awards, the estimated cost of PPD life pensions and supplements was $489 million. To this figure must be added $57 million for commuted-at-issue pensions, for an overall total of $546 million for 1985 PPD cases.

I should add that while $546 million is the appropriate actuarial estimate for 1985 PPD awards, given the Board's current adjudicative policy, there is an artificial feature to that cost figure. Commuted-at-issue pensions are now capitalized on the basis of a 7% discount rate, a figure which makes sense only if life pensions are assumed *not* to be protected against future inflation. Now that pension benefits under the Act are fully and formally indexed to the Consumer Price Index, the Board will have to review its policy regarding commutations. If the 2% rate were to be employed here (as it now is in capitalizing life pensions for assessment purposes), the cost of commutations would be $109 million, and the true cost of the existing system in 1985 would have been $598 million.

Table 2

Hypothetical Costs of Alternate PPD Benefit Structures for 1985 Awards*

Type of PPD Benefit	Assumed Proportion of Earnings Loss (all figures: $ millions) 20%	25%	30%
1) **Current Law: Pensions Indexed** Life Pension at 2% Discount; S.45(5) Supplements; and Commutations at 7% Discount Rate.	546 (Comm: 57)	546 (57)	546 (57)
2) **Current Law: Commutations Indexed** Life Pension at 2% Discount; S.45(5) Supplements; and Commutations at 2% Discount Rate.	598 (Comm: 109)	598 (109)	598 (109)
3) **Dual Award** Physical Impairment Benefits: Maximum 10% of Average Indus. Wage; Plus Compensation for Earnings Loss	511 (Phys. Imp.: 82)	635 (82)	760 (82)
4) **Blended Award** Physical Impairment Benefit: Maximum 50% of AIW; Supplementary Compensation if Earnings Loss Exceeds Amount of Physical Impairment Pension	787 (407)	899 (407)	1,011 (407)
5) **Double Award** Physical Impairment Benefit: Maximum 100% of AIW; Plus Compensation for All Earnings Loss	1,132 (813)	1,228 (813)	1,323 (813)

* This Table was prepared by me from figures provided by the WCB Actuarial Branch. Please consult Appendix D for Statement of Actuarial Assumptions and Qualifications.

The next step in the analysis was to assume hypothetically different levels of wage loss and to ask what the new dual award benefit would cost at each level. That procedure, whose results are also contained in Table 2 is especially useful in comparing the cost implications of different versions of PPD reform: it was the basis for the comparative estimates of the Liberal and NDP proposals discussed earlier. For my purposes here, the important point exhibited in this Table is what a marked difference is made in the total cost of compensating PPD victims by fairly small percentage variations in the wage losses assumed for the latter. If the total wages lost are in the order of 20%, a wage loss system will actually cost considerably less than the current program: $511 million versus the $546 million actually awarded in 1985 (or the $598 million which would now be paid if commutations were now to be done on the footing of a fully-indexed Act). On the other hand, if aggregate wage loss were at the 30% level, the cost of my proposals rises to $760 million, sharply higher than now. At a hypothetical 25% rate of wage loss, my dual award system would cost $635 million, which is not that far off the current system, at least if the Board's commutation policy were to be altered.

3.

These figures give us some feeling for the range of possible costs or savings in a move towards a wage loss PPD system. That naturally raises the next and vital question: what is the *actual*, rather than the hypothetical, wage loss now being experienced by disabled Ontario workers? It was not possible for us to do a systematic and verifiable investigation of this factor among the overall population of PPD pensioners in Ontario. Under the guidance of Professor Johnson, the Board did take a close look at the experience of its S.45(5) beneficiaries, the group most likely to experience substantial wage loss. Johnson has written a brief paper which sets out and interprets this survey and situates it in the context of broader-based wage loss studies in the United States (see Appendix C of this Report). Thus we do have several items of circumstantial evidence which gives us a somewhat closer indication of the aggregate wage loss one might expect to find among PPD victims in Ontario.

To get some guidance on this issue, I have had a number of conversations with senior officials in the WC programs in those Canadian jurisdictions which have some form or other of wage loss (in Saskatchewan, New Brunswick and Quebec which compensate actual wage loss, and in British Columbia, which uses projected wage loss). There are significant differences in the labor markets, WC claimant pools, and statutory programs in these jurisdictions. As well, none of them has yet been able to undertake a systematic review of the aggregate wage losses actually experienced by their own pensioners. With these qualifications, though, all officials were unanimously of the view that within each of their provinces, PPD victims as a whole lost appreciably less than 20% of their potential wages as a result of their disabilities. (As illustration, in 1985 New Brunswick made a total of 463 physical impairment awards, of which 73 were accompanied by earnings loss benefits, about one in five to disabled workers who were partially employed.)

Those estimates are in line with the detailed research which has been conducted in the United States on this topic under the auspices of the U.S. government review of WC programs in that country. This research was done among PPD victims in the early 70s in New York, Florida, California and Wisconsin. As Professor Johnson indicates in his synopsis of the results, there are considerable limits and variations in this research, as well as differences between those states at that time and Ontario now. Again, though, the aggregate wage loss found tended to be around 20% or less of what the PPD victims would have earned had they suffered no such disability.

I turn now to the investigation we were able to do in Ontario. This involved an in-depth look at the Board's files in S.45(5) supplement cases, which gave us a fairly accurate estimate of the situation in this sharply-skewed sample, and an earlier, highly-impressionistic survey of wage loss among a representative sample of all PPD pensioners. Using both sets of data to try to offset the limitations and difficulties in each, Johnson's bottom line estimate is that aggregate wage loss among Ontario PPD recipients is now 26% or less: this figure is somewhat higher than reported above from other Canadian and American jurisdictions, but is still within the same ball-park range.

From the previous section, one can see that if that estimate is relatively close to the mark, then a wage loss system of the type I have proposed is likely to cost roughly the same as does the current clinical pension. I caution, again, against undue reliance on the exactness of these figures. Much will depend on the precise nature of the statute, how it is interpreted and administered by

the Board, and how workers and firms react to the new incentives such a PPD provision will generate. Nor should one overemphasize the significance of these before-and-after comparisons of PPD program costs, instead of thinking first about the type of benefit which PPD victims deserve in principle. In evaluating that latter issue, though, I am satisfied that if Ontario were to introduce a dual PPD award, whose priority is to channel the bulk of the compensation dollars to those victims who actually suffer a serious loss in earnings, this more equitable distribution of PPD funds would not entail a sharp change, upwards or downwards, in the amount of money now being expended on PPD claimants as a whole.

Part III

Conclusion

My analysis in this Report has followed a somewhat long and winding path. Rather than repeat, in summary form, my numerous arguments and conclusions, I shall set out the four major questions which the government will have to address regarding PPD, and the factors which might incline it in one direction or the other.

(i). The first question is whether there should be any substantial changes at all in the statutory PPD benefits. Just because this searching review of the issue has been undertaken does not imply that it must end in a legislative alteration in the *status quo*. True, the current law does find little favor with any interested group in Ontario, and other jurisdictions in Canada and the United States have undertaken major surgery on their PPD benefits (typically adopting some version or other of the dual award with an explicit earnings loss component). However, Ontario could sit back and take advantage of the fact that these statutory experiments have been undertaken elsewhere, in the hope that an informed consensus might eventually emerge within this province about the ideal shape of its own PPD benefit.

However, no one arguing for that position should be under any illusion that the *status quo* is a static phenomenon. Within the framework of the existing law, the Board adjudicators have been awarding thousands more pensions every year, at higher average disability ratings, and supplemented by much larger S.45(5) expenditures. These changes have been incremental and invisible, with no one ever having made a conscious policy judgment about whether, let alone how, Ontario should in 1984 cumulatively spend twice as many dollars on PPD victims as it did in 1979. Now the system faces the prospect that a decision from the Workers' Compensation Appeal Tribunal might hold that the Board has been in error in its long-established interpretation of the statute as embodying a clinical rather than an earnings-based pension. Whatever the merits of that legal dispute about the proper reading of the old statute, surely Ontarians will get the best PPD policy for the future only from a government which addresses this problem on its overall merits, rather than by debating the proper interpretation of statutory language enacted nearly a half century ago.

(ii). If one believes, then, that the time for change has come, the next question is whether a new benefit should take the form of a *duplicative* or a *redistributive* award. What I mean by a "duplicative award" is that the existing clinical pension should basically be retained (though it would be altered so that physical impairment benefits were based on a common average industrial wage, rather than each worker's own pre-injury wage), and then stacked on top of that would be another benefit to compensate for the economic losses inflicted by the injury. By a "redistributive award" I mean one which assumes that the primary role of WC is to compensate for all the earnings losses of those PPD victims who suffer them, and this should be achieved by cutting back, more or less sharply, on the amounts of money paid out in physical impairment benefits to those disabled workers who suffer no long-term earnings losses.

When contrasted in that way, the evident virtue of the double award approach is that no PPD claimant would lose as a result of the new system. Those who suffered just a physical impairment would continue to collect an equally generous PPD pension, while those who suffered lost earnings would get full compensation for that as well. The price of this approach, though, is that the costs of PPD benefits would nearly double (from a mid-1980s level which has itself doubled from the late-70s), and this extra money would have to be found in a program whose overall costs, unfunded liability and employer assessments have all been escalating for the last few years.

Even ignoring these immediate financial implications, my own view is that there is no good case on the merits for such a huge increase in expenditures on this one group of disabled workers – those who happen to have been injured on the job, rather than on the road, at home or wherever. It is important to remember that while employers initially pay the assessments for WC, the ultimate economic source for the bulk of these funds is the Ontario worker, whether through higher prices or lower wages. If Ontario workers and their government believe the provincial economy can afford to spend another $600 million in compensating disabled workers, this money would be far better spent on a comprehensive disability program which replaced some portion of

the earnings lost due to any type of disability (ideally, as part of a general reform of tort liability for personal injuries, as advocated in my second Report on WC and in the recent Slater report on the insurance industry).

(iii). Assuming, then, that alteration of the PPD benefit entails some redistribution of the $600 million now being spent on these claims, the next question is whether this should take the form of a *blended* or a *dual* award. The "dual award" would sharply reduce the current clinical pension (by basing it on ten percent of the AIW) and add to this a full earnings loss benefit. The "blended award" would preserve a much higher proportion of the clinical pension (two-thirds of its present average value when the basis is 50% of the AIW), and then top up that fixed pension with additional payments to those PPD victims who suffer earnings losses that exceed the amount reflected in their basic pension.

The virtue of the blended award is that it accomplishes some redistribution of PPD expenditures for the benefit of those who suffer the major financial losses, while cushioning the impact of that change upon those who would receive only a clinical pension for physical impairment. The price of this cushion, though, is that a fifty percent increase (now $300 million a year) would be required in the aggregate annual expenditures on PPD victims. As well, to the extent that the need for this cushion is the uneasiness so many people feel about how the Board would measure and pay for earnings loss directly, the blended award does not itself allay that concern. The Board would still have to decide how to compensate for the economic losses suffered by the injured worker. If one can devise a satisfactory method for doing that, I doubt that one would then choose to preserve a physical impairment pension whose capital value for purely non-economic harms would be more than twice as high as that now paid in the fault-based tort system.

(iv). That takes me to the crucial question of exactly how to devise a PPD benefit to compensate for lost earnings. Should one use the loss of *earnings capacity* or the loss of *actual wages* approach? The "actual wage loss" model would require the Board to determine how much of the disabled worker's pre-injury wages (adjusted for inflation) had been reduced because of his workplace injury, to make up the difference in a monthly benefit, and to revise these payments periodically as the employment circumstances of the worker changed. Under "loss of earnings capacity", by contrast, the Board would have to make a once-and-for-all estimate of the disabled worker's future earnings losses and compensate for this loss through a fixed pension which was calculated so as to make up for the average wage loss to be expected during his future employment career.

Having gone into such detail in the main body of this Report, I shall not rehearse here the pros and cons of these two approaches. Suffice it to say that the "wage loss" model has a clear edge in accurately and equitably matching compensation paid to earnings actually lost by each individual worker, whereas the fixed and guaranteed "earnings capacity" pension would enhance the personal security and incentives of disabled workers and minimize the long-term administrative burden upon the Board. These inevitably competing values makes this by far the closest question in my eyes, and ultimately I advocate a hybrid between the two approaches. While the law should begin with the principle of compensating for actual wages lost, it should qualify this principle in a variety of ways to preserve the initial levels of payment for significant periods of time, and should also empower the Board to develop categories within which long-term "earnings capacity" pensions would be deemed appropriate (e.g., for the older or the emigrating worker).

* * * * *

These are the four major questions – the forks in the road as it were – which a government must confront in grappling with the PPD problem. As to each I have indicated the fork which I would take. Ultimately these bring me to a point not too far distant from the position which I staked out in my first Report six years ago: albeit, a position which is considerably modified in its details, and one I now hold with a somewhat greater appreciation of its difficulties. I do derive some confidence from the fact that all other jurisdictions in North America which have recently altered their PPD benefit structures have moved in this same general direction, and that Professors Burton and Johnson, two of the leading scholars on this subject, both endorse my proposals. But the person reading my conclusions in this Report is entitled to know of, so as to be able to take account of, my earlier expressed views.

In the final analysis, though, what *my* conclusions are is not all that important. The bottom-line decision is the prerogative of the elected government and the people it represents. My primary role has been to spell out the issues, to clarify the choices, and to assemble the evidence and the arguments which can be made for either side of these questions; so that the choices that are made, whatever they might be, are as informed as they can be. Hopefully this final Report will cast somewhat less heat and more light on this always contentious topic.

Postscript:

What to Do About Existing PPD Pensions?

A.

My focus in this Report has been on how to improve the way in which Ontario WC will compensate permanently disabled workers in the future. In the main body of the Report I have made no specific recommendations about what should be done with respect to existing PPD pensions awarded under the present legislation. I do not believe that one can make a sound judgment about this second step in the inquiry until one knows whether and how the basic legislation is to be altered for the future. One needs to know what deficiencies are perceived in the current law and what is considered to be a fair and sensible PPD benefit to put in its place. Only when one has made up one's mind about these issues of principle can one figure out what to do about pensions which were awarded in the past.

However, after the Minister and his staff had an opportunity to read and discuss with me the draft of my Report, they asked me to append a postscript which would canvass the major options and arguments about how to handle this pressing and troublesome issue. I have attempted to do this – in particular, to indicate how one's views about the appropriate reform for future cases must influence one's judgment about what to do with existing pensions. While I asked the Board's Actuarial Branch to begin the task of calculating the financial implications of these various alternatives, they have not been able to give me the final figures in the limited time I had before this Report was to be submitted and released. Since cost is certainly a relevant – though not necessarily a decisive – factor in selecting one approach rather than another, one cannot make a final judgment about this issue until that last piece of material becomes available.

B.

There are several basic approaches one can take to this problem: the new law might not be applied at all to any existing pensions, or it might be applied in full to all of them, or it might be applied only in some respects and only in certain cases (and I shall spell out two variations on that last theme). The first such approach is the one reflected in the Quebec legislation of 1985: in that province's judgment the fact that a new dual award PPD benefit was being adopted for future cases was no reason to alter pensions which had already been awarded under the past law.

That position is in accord with the general legal principle that legislation should be applied only prospectively and not be used to revise decisions rendered in prior cases. For example, few would argue that a statutory reform of tort law would be used to alter, upwards or downwards, court verdicts and awards made about earlier disabling injuries. The only reason why such a step might seem tenable under WC is that whereas tort awards are made and paid in once-and-for-all lump sums, PPD benefits take the form of life pensions. That means that application of the new law to existing WC pensions is not fully retroactive; presumably one would only be altering the payments to be made in the future, rather than going back to recalculate and readjust the payments already made in the past. However, that difference between the typical modes of payment in tort and WC law does not entirely justify a different approach in the latter program. A good many WC benefits are paid as lump sums, in particular, almost all PPD cases with impairment ratings of 10% or less in which the Board's practice is to commute the pension at issue and to pay the money out all at once. Thus, if one considers two workers who were both injured in 1982 at the age of 30, one with a disability rating at 10% and the other with 11%, the troublesome question is why a law passed in 1987 should alter the amount of money to be paid the latter in a life pension, but not affect the lump sum which had been paid to the former.

Besides these objections of principle to the partial form of retroactivity which is entailed by applying a new WC law to old pension awards, there are some important practical difficulties. These concerns become especially pressing if the PPD reform one has in mind reflects the *redistributive* model (whether this be a *dual* or a *blended* award), rather than just stacking on top of the current physical impairment pension another benefit to compensate for loss of earnings. The key premise of the redistributive model is that, by comparison with the *status quo*, some disabled workers will collect more money (in particular, those who suffer extensive loss of earnings), while others will collect less (those who suffer little or no lost wages from a given

physical impairment). The problem is that the current pensions were actually awarded under a different law, one which placed the emphasis on a clinical rating rather than upon the economic disability. Thus, if one were to apply the new legislative distribution across the board to all the pensions inherited from the past, some pensions would be substantially improved but others would be cut back. The fate of these latter pensioners would give a real edge to the charge that it is wrong to use a new law to take away rights which had been established and vested under the old law.

C.

If one's only concern, though, is about the *reduction* of previously-awarded benefits, there is an evident solution to that problem. The new scheme should be selectively applied to existing pensions, presumably at the voluntary option of the pensioner. If he or she felt they would do better under the new law, they could elect to come under its umbrella (and I assume this would be a once-and-for-all step which had to be taken within a reasonable period of time). To the extent that pensioners thought they would do worse under whatever version of a new benefit structure happened to be adopted, they could stick with their existing pensions. Thus, rather than mandatory, across-the-board application of the new law to present pensions, there would be only voluntary and selective use of the new benefit program.

While that latter option would answer the objection to legislative reduction of existing legal entitlements, it will evoke some objections of its own. The most obvious one is that voluntary, selective application of a new law would be very expensive. The 100,000 existing pensions would be maintained in full, a present capital liability of somewhere near $4 billion (now only about one-third funded); then any worker who was experiencing greater loss of earnings than were made up by his clinical pension would be compensated for all the deficiency. A ball-park estimate of the additional cost of such a retroactivity benefit is something over $2 *billion* (present capitalized value).

If one believes, as do those who advocate the *duplicative* model for reform, that the province is not spending enough money in compensating those who are disabled at work, noting these financial implications will not likely be a persuasive argument. Be that as it may, I do want to emphasize that selective, voluntary application of the new law is in fact a version of the duplicative model; the pensions of those who need compensation for lost earnings are increased while the pensions of those who have no wage loss are left untouched. And when one recognizes that fact a different issue of fairness arises, particularly for those who propose some version or other of the redistributive model for reform. If the latter approach is the rationale for the new benefit structure which will be applied to all future cohorts of disabled workers, how can one justify the use of the duplicative model for revising the pensions only of the group of workers who happen to be on disability benefits now?

There is a technical difficulty in applying the selective approach even if one sees nothing unfair about it in principle. The kind of redistribution of the benefit dollar which I have suggested means not only that some disabled workers would get less while others would get more, but also that even a single disabled worker would get more at one time and less at another time during the life of his disability. During a period when little or no wage loss was being experienced, all that would be received would be the much smaller physical impairment pension; during a later period when there was full loss of work and wages due to the disability, much more generous earnings loss benefits would be paid; but after the presumed retirement date (age 65) had been reached, a somewhat smaller retirement pension would be payable. Again, there is no particular difficulty in applying that complex regime to future disabling injuries, all of whose benefit payments would be made under the new statutory provision. It is much more difficult, though, to make judgments about how equitably to treat cases in which part of the life cycle of that disability has been dealt with under the old legislation, but the next part is to be governed by the new and different law.

Suppose, for example, that a worker has collected the full clinical pension during a period when he suffered no wage loss, but shortly after the new law is enacted his disability forces the worker out of his job and he now wants to collect the full wage loss benefit. Alternatively, suppose that for many years a worker had been suffering a substantial wage loss for which his clinical pension under the present law did not provide anywhere near adequate protection, and thus when the new law comes to effect he elects to collect full wage loss benefits for four or five years; however, he then reaches 65, at which time his wage loss benefit is supposed to end and be replaced by a lost retirement income benefit, but one which the Board simply has not calculated and provided for

during the lengthy period of time spent under the prior law. These are just two examples of the many difficult cases which would have to be faced even by a selective, voluntary application of a new PPD benefit when the latter had to be applied midway through the history of any one worker's disability.

D.

As I noted earlier, whether for these or other reasons the government of Quebec declined to apply its new dual award PPD benefits to existing pensions. New Brunswick, having initially decided in 1982 that existing pensions should be brought under the dual award system, repealed that statutory provision in 1984 after further study of this problem. Thus there are both recent precedents as well as cogent arguments for Ontario taking that rather easier path.

There are, however, some real difficulties with such a hands-off approach. Ontario now has over 100,000 current recipients of PPD pensions. The conviction that many of these disabled workers were not being decently compensated for the actual economic losses inflicted by their workplace injuries helped generate the impetus for re-examination and renovation of WC in the 80s. There would be understandable resentment, then, if the province were to enact PPD reform for the benefit of workers who had not yet been injured, but left entirely unattended the claims of the injured workers who helped secure enactment of such reform.

The voluntary, selective approach to retroactivity is one kind of response to this felt concern. That option has its own considerable problems, as I discussed above. There is a variant of that approach, though, which must also be considered. Pensioners who feel it is to their advantage to opt into the new system would be permitted to do so; those who do not so elect would continue to receive their existing pensions; however, the present dollar amounts of these pensions would not be increased to stay in step with later price inflation. This was the path actually taken by Saskatchewan in 1979 when it pioneered with the dual PPD award. The same policy is implicitly being followed in the Newfoundland legislation of 1984, since the existing pensions of those who do not opt into the new wage loss benefit are being capitalized at market interest rates and paid out in lump sums. The Saskatchewan method was recommended in the 1981 Ontario White Paper. A further variation was proposed in 1984 by the Liberal members of the Select Committee who advocated only half inflation-proofing those existing pensions which were not needed to pay for actual wage loss (and this treatment of existing pensions fitted naturally with the Liberals' *biended award* proposal for future reform, under which the value of the current physical impairment pension would be based on only half the average industrial wage).

The case for this approach is quite straightforward. Those workers who are suffering wage loss substantially in excess of the clinically-rated pension will be given the additional compensation they deserve under a WC program whose historic rationale is to compensate for the *economic* consequences of worker injuries. Much, if not all, of the money needed to pay for that improvement in the financial situation of this group of disabled workers would come from the money saved by not making full inflation adjustments in the pensions of the other group of disabled workers who were fully re-employed with no wage loss. The justification for either reducing or eliminating inflation protection for this latter group of disabled workers is that they should not be entitled to inflation-proof pensions under a no-fault WC program which is primarily designed to insure against lost earnings (the latter, after all, being the theory which would underlie the adoption of this new PPD system).

The case against that proposal is equally straightforward: it mandates a reduction in the *real* (as opposed to the *nominal*) value of existing pensions. True, that reduction would take place gradually and apparently due to the eroding effect of inflation, rather than immediately as a result of legislative enactment. As well, as of the time Saskatchewan acted and the Ontario White Paper was written, these provinces had only a practice of regular inflation adjustment in existing pensions, rather than formal legal indexation. Now that Ontario has taken the step this past year of explicitly entitling all pensioners to annual increases in their benefits to match future inflation, this guarantee would have to be legislatively removed from non-wage loss pensions to make the Saskatchewan approach possible. If one objects, as I suspect most people would, to legislation which explicitly reduced some existing, vested pensions by application of a new statutory formula, one must feel queasy about legislation which allows ongoing inflation to accomplish the same result over time.

E.

The lesson from this review of the several options is that there is no easy solution to the dilemma of how to treat existing WC pensions if in fact a new PPD law is adopted. If anything, this dilemma has sharpened in the last few years with the formal indexation of all existing benefits and the discovery that the program is severely underfunded against that liability. Certainly one cannot make any judgments about this problem until one gets some sense from the actuaries of the financial implications of the several alternatives.

Even after that information is forthcoming, I would caution against any quick and final decision about this issue. The first and fundamental question to be addressed is whether and how the basic law is to be changed. If one believes that there is a better way of compensating workers who are disabled in the future, that step can and should be taken even if one is pessimistic about being able fairly and sensibly to revise the pensions awarded to workers in the past (and the provinces of Quebec and New Brunswick are examples of jurisdictions where the law was revised only for future cases).

Indeed, even if one were inclined to bring some or all of the existing pensions under the new law, I would strongly advise against immediate implementation of any such step, for practical administrative reasons. As I have noted a number of times, there are now more than 100,000 PPD pensions in existence, and they are increasing at a rate of 10,000 a year. The Board could not possibly take on the task of suddenly re-evaluating even a significant fraction of these cases. Ideally, the Board should first be given sufficient time both to develop the criteria and the procedures for applying the new legislation, and then to work out the kinks in these policies through dealing with the variety of new cases as the latter begin to flow in. Only after some such lead time and experience could the Board effectively tackle the job of revising perhaps tens of thousands of old pensions, many of them with a tangled life history. One would do the disabled workers of Ontario no favor by simply announcing in easy-to-write statutory language that they are finally going to get the better treatment they have pursued for so long, and then have these workers encounter a bleak reality of administrative confusion and contention.

APPENDIX A

The Role of the Permanent Disability Rating Schedule in the Ontario Workers' Compensation Program

A Report Prepared for the
Ontario Workers' Compensation Board

by

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Some workers who experience work-related injuries have permanent consequences of those injuries. Medical or economic consequences persist after maximum medical improvement from the injuries has occurred. Section 45 of the Ontario Workers' Compensation Act provides cash benefits for such workers. The primary benefit is included in Section 45(1), which provides lifetime compensation. The weekly benefit is proportionate to the worker's impairment of earning capacity, which is to be estimated from the nature and degree of the injury. Section 45(3) authorizes the Workers' Compensation Board to "compile a rating schedule of percentages of impairment of earning capacity for specified injuries or mutilations that may be used as a guide in determining the compensation payable." Based on this authority, the Board has issued a *Permanent Disability Rating Schedule*, referred to here as the *Rating Schedule*.

The Workers' Compensation Board asked me in the summer of 1985 to evaluate the present rating schedule and to discuss other possible schedules that might be adopted in Ontario. Such a review seemed appropriate for several reasons. The present schedule became effective in 1972 and thus may be dated. Also, it is considerably shorter than some of the alternative rating guides, which may be a disadvantage. Partially reflecting these factors, in 1985 the Medical Services Division of the Board prepared a review of the current *Rating Schedule* and proposed an alternative schedule, the *Guidelines for the Evaluation of Permanent Impairment*, referred to here as the *MSD Proposed Guidelines*. The present schedule also was criticized by the Ombudsman because of several factors, including its brevity and the significant number of complaints to the Ombudsman about the schedule. These developments provide a short-run context explaining why the Board asked for an assessment of the current *Rating Schedule*.

There also is a long-run context in which the assessment of the schedule must proceed. Since the adoption of the present Ontario schedule in 1972, several significant developments have occurred in Canada and the United States concerning the compensation of permanent disabilities. The National Commission on State Workmen's Compensation Laws submitted its report in 1972 and urged the states to carefully review their approaches to permanent partial disability benefits. Several states have already enacted or are presently considering fundamental changes in their permanent disability benefits. Several of the provinces have also significantly modified their approaches to compensating workers with permanent disabilities. While Ontario has not yet enacted any fundamental changes for permanent disabilities, Professor Paul Weiler has issued several reports recommending such changes and they have been widely debated within the province. One of the issues discussed in my report is whether any changes in the present *Rating Schedule* that are suggested by short-run considerations are desirable in light of the longer-run context for reform of permanent disability benefits in Ontario.

The plan of this report is first to specify the various temporary and permanent consequences of work-related injuries. Section II then reviews the differing views concerning which of the permanent consequences warrant cash benefits in a workers' compensation program. Section III surveys the various approaches used to operationalize the payment of cash benefits to workers with permanent disabilities. Particular attention is devoted to the role of a schedule. Section IV evaluates the current Ontario *Rating Schedule*, the *MSD Proposed Guidelines*, and the American Medical Association's *Guides to the Evaluation of Permanent Impairment*. Section V provides the conclusions and recommendations. An appendix includes my earlier study (Burton 1983) that is cited below for more extensive treatment of certain topics.

The report does not attempt to assess all aspects of the benefits currently paid in Ontario to workers with permanent disabilities. My assignment was to evaluate the current *Rating Schedule* that is used (in conjunction with other inputs, such as the worker's preinjury wage) to determine the weekly benefits under Section 45(1). A complete assessment of current benefits for permanent disability would have to consider other benefits, such as the supplements provided by Section 45(5) for unusual impairment of earning capacity and by Section 45(7) for older workers.

I. Consequences of Work-Related Injuries

An injured worker will experience temporary consequences of the injury and may experience permanent consequences (Table 1). Temporary in this context refers to the period between the date of injury and the date when maximum medical rehabilitation or maximum medical improvement (MMI) has been reached; permanent refers to the period after the date of MMI.

Table 1
Consequences of Work-Related Injuries

Temporary Consequences

1. Pain and Suffering
2. Need for Medical Care and Rehabilitation
3. Work Disability

Permanent Consequences

1. Pain and Suffering
2. Need for Medical Care and Rehabilitation
3. Permanent Impairments (PI)
4. Functional Limitations (FLI)
5. Work Disability (WD)
6. Nonwork Disability (ND)

The temporary consequences are not the primary concern of this report, but several are included in Table 1 because they are referred to in subsequent discussions. A likely consequence of the injury is *pain and suffering*, which usually subsides between the date of injury and the date of MMI. Another likely consequence is the need for medical *care and rehabilitation*. In addition, unless the injury is very minor, the worker probably will experience loss of earnings (*work disability*).

The permanent consequences included in Table 1 receive more extended discussion because they are the primary concern of the report. Most workers injured on the job fully recover by the date of MMI. If the worker has a relatively serious injury, several permanent consequences are possible. There may be a persistence of *pain and suffering* and a continuing need for *medical care and rehabilitation*. Of particular interest are the other permanent consequences because they are the focus of most of the debate concerning the design of permanent disability benefits in a workers' compensation program. A *permanent impairment* (PI) is any anatomic or functional abnormality or loss that remains after maximum medical rehabilitation has been achieved. Examples of permanent impairments are an amputated limb or an enervated muscle. The impairment probably causes the worker to experience *functional limitations* (FLI). Physical performance may be limited in such activities as walking, climbing, reaching, and hearing, and, in addition, the worker's emotional and mental performance may be limited. Functional limitations, in turn, are likely to result in disability, of which two types should be recognized. *Work disability* (WD) refers to the loss of earning capacity or loss of actual earnings that results from the functional limitations, while *nonwork disability* (ND) includes the loss of the capacities for other aspects of life, including recreation and the performance of household tasks. These definitions are elaborated in Burton (1983), pp. 19-23.

II. Which Permanent Consequences Should Be Compensable?

The obligation of the workers' compensation program to provide medical care and rehabilitation services is generally accepted (although in some jurisdictions there is disagreement about the extent of vocational rehabilitation services to which the worker is entitled). Conversely, in most jurisdictions there is general agreement that the worker is not entitled to benefits because of pain and suffering. The rationale often given is that the original design of workers' compensation involved a trade-off, in which the employee was able to obtain benefits without demonstrating employer fault and the employer's liability was limited to certain consequences of the injury, not including pain and suffering. The responsibility of the worker to bear "the pain and suffering consequent upon his injury" was a component of the *Final Report* of Commissioner Meredith (1913 at p.15), which provided the rationale for the original Workmen's Compensation Act in Ontario.

Most of the recent controversy over which of the permanent consequences of a work-related injury deserve compensation involves arguments concerning permanent impairments, functional limitations, work disability, and nonwork disability. (See Burton (1983), pp. 23-24 for details.) An obstacle to ferreting out the purpose of the benefits is that, because these four consequences are sequential and interdependent, a particular consequence may be endorsed as a basis for compensation because it serves as a convenient proxy for other consequences of primary concern. Thus a writer may argue that impairments should be compensated when the real concern

is for the work and nonwork disabilities that flow from the impairments. This indirect route to compensating disabilities may be chosen because impairments may be easier to measure than disabilities. Unfortunately, the commentators who favor payment for impairments do not always make clear whether this payment is for the existence of an impairment by itself or as a proxy for disability.

To the extent the rationale for benefits is discernable, however, two schools of thought can be identified. One considers work disability as the sole justification for workers' compensation benefits. This view recognizes that some jurisdictions pay benefits on the basis of evaluation of the extent of impairment, but argues that when such evaluations are made, wage loss is conclusively presumed. The jurisdiction, in short, compensates the impairment because it serves as a proxy for work disability.

A second view of the rationale for benefits for workers with permanent consequences of their injuries would accept work disability as the primary basis for benefits, but would argue there is a secondary role for "impairment benefits." The descriptions of these impairment benefits indicates that the purpose is not only to compensate impairment per se but to use permanent impairment (PI) as a convenient proxy for the functional limitations (FLI) and nonwork disability (ND) that result from the impairment. These can be referred to as PIFLIND benefits.

The dominant view probably is that the only permanent consequences that warrant benefits from workers' compensation are medical care and rehabilitation and work disability. However, the views about which consequences deserve benefits are not static. For example, the *Final Report* of Commissioner Meredith (1913 at p.15) would have required Ontario workers to bear all the expenses of medical and surgical treatment and would have replaced only 55 percent of lost wages. Both these notions have long been abandoned as inadequate. In other jurisdictions, impairment benefits (or PIFLIND) benefits have been endorsed (e.g., by the 1972 National Commission in the U.S.) or adopted (e.g., in Saskatchewan). Thus, while the "conventional" view is that benefits are justified only for medical care and rehabilitation and work disability, that view is not universally accepted. In fact, a consensus appears to have emerged in Ontario subsequent to the submission of the Weiler reports that both work disability and impairment (or PIFLIND) justify benefits. What has not emerged is a consensus on the appropriate way to operationalize the benefits serving these two purposes.

III. Operationalizing the Decision About Which Permanent Consequences to Compensate

The previous section considered which of the permanent consequences of a work injury provide a rationale or purpose for workers' compensation benefits. I now examine which of the consequences are actually relied upon in determining the amount of benefits to be paid. (For an extended discussion, see Burton (1983), pp. 24-28.)

A. Compensating Work Disability

Two basic operational approaches can be identified for benefits for which the rationale or purpose is work disability. First, the retrospective approach (or wage-loss or *ex post* approach) pays benefits after the date of MMI only when there is actual wage loss due to the work-related injury. This approach was introduced into Canada by Saskatchewan in 1980. Other Canadian jurisdictions that have adopted the approach are New Brunswick (1982), the Yukon Territory (1983), and Newfoundland (1984). Since 1979 the wage loss approach has been the primary basis for permanent disability benefits in Florida. (In each of these jurisdictions, permanent impairment benefits are payable in addition to the wage-loss benefits.)

The second basic operational approach for compensating work disability relies on proxies for actual wage loss. The proxies may be the extent of impairment or of functional limitations or of loss of earning capacity, depending on the particular jurisdiction. The approach can be termed a prospective (or *ex ante*) approach since the evaluation of these proxies (and thus the decision about the amount of the benefits) is made after the medical condition has stabilized but before most or all of the actual wage loss occurs for which the benefits are intended.

There are several varieties of the *ex ante* or prospective benefit approach. One variety is exemplified by the Ontario workers' compensation program. The schedule issued by the Workers' Compensation Board is used to produce permanent disability ratings that, in turn, are used in conjunction with information on the worker's preinjury wage to determine the weekly amount of

the permanent disability benefits. The benefits are paid for life. This variety of *ex ante* disability benefits – where the weekly benefit amount is proportional to the disability rating and the duration is for life – was previously used in all Canadian jurisdictions and is still in use in several provinces in addition to Ontario. A variant in which the weekly benefit is proportional to the disability rating and the benefit is paid until the worker's normal retirement age is used in one U.S. jurisdiction (Nevada).

Another variety of the *ex ante* approach to compensating work disability is found in most U.S. jurisdictions. The workers' compensation statute contains a schedule or list of injuries with corresponding durations of benefits. The schedule is used in conjunction with the worker's disability rating to determine the duration of the permanent disability benefits, which seldom are paid for more than 200 weeks. The weekly benefit is a fixed percentage (usually 66 2/3 %) of the worker's preinjury wage, subject to a maximum weekly amount. Nonscheduled benefits – those not included in the list of injuries in the statute – are rated in terms of the seriousness of the worker's impairments or the extent of the loss of earning capacity due to the work injury. The rating is then used to determine the duration of the permanent disability benefits, with the maximum duration 600 weeks or less in most jurisdictions. The weekly benefit amount for nonscheduled permanent partial disability benefits normally is 66 2/3% of the worker's preinjury wage, subject to a maximum figure.

The Canadian version of *ex ante* benefits thus varies the weekly amounts of the benefits in proportion to the disability ratings while the duration extends for life; in contrast, the U.S. version varies the duration of the benefits in proportion to the disability ratings while the weekly benefit is a fixed proportion of the worker's preinjury wage. (There are exceptions to these characterizations, but they are of sufficient generality to warrant their use.) The common feature of both versions of the *ex ante* approach is that the disability ratings (and thus, to a large extent, the benefits) are based on proxies for the actual wage loss that is expected to occur after the rating date.

This review indicates that Canadian jurisdictions are using two operational approaches to compensating work disability. The *ex post* (or retrospective) approach was introduced into Canada by Saskatchewan and has been adopted by several other Canadian jurisdictions. The *ex ante* (or prospective) approach was previously used in all Canadian jurisdictions and still is used in most, including Ontario. Thus a single purpose for benefits – namely compensating work disability – can be served by two different operational approaches. Moreover, both of these approaches can be combined to provide benefits after the date of MMI. In New York, for example, workers with serious injuries to the arm, leg, hand, or foot are first provided scheduled permanent partial disability benefits, and then, if actual wage loss due to the work injury is continuing, the workers may qualify for wage-loss benefits.

B. Compensating Impairment (or PIFLIND)

There are several jurisdictions with workers' compensation benefits that explicitly compensate an injured worker for permanent impairments or for the permanent impairments and the resulting functional limitations and nonwork disability (PIFLIND). Saskatchewan, for example, provides benefits for permanent impairments or functional limitations; the benefits are paid in a lump sum and are based on a schedule that provides a maximum of $20,000. These impairment benefits are paid in addition to the benefits paid because of work disability (actual loss of wages). New Brunswick, Newfoundland, and Florida are other examples of jurisdictions with a two-track system of benefits for workers with permanent consequences of their injuries. One track provides wage-loss benefits for workers with actual losses of wages. The other track provides impairment benefits, with the amounts determined by the severity of the injuries.

C. The Purposes of Scheduled Benefits

Scheduled benefits are those that utilize a schedule (or list) of injuries as a significant input in determining the duration, weekly benefit, or total amount of the benefits. The schedule may be included either in the workers' compensation statute or in a document issued by the workers' compensation agency.

The previous discussion in this section indicates that scheduled benefits can serve different purposes. If the only purpose of the permanent disability benefits is to compensate work disability, then the function of the scheduled benefits is to serve as a proxy for subsequent wage

loss. In such a scheme, the amount of the permanent disability benefits will depend on the seriousness of the worker's impairment plus the level of the worker's wages before the injury. The available evidence indicates that use of schedules as a proxy for subsequent wage loss is a significant weakness of the workers' compensation program. There is a serious equity problem because the *ex ante* approach to permanent disability benefits provides a poor match between benefits and actual earnings losses. (This conclusion is documented in Burton (1983), pp. 28-31.)

The scheduled benefits serve an entirely different purpose in those jurisdictions that have a two-track benefit scheme in which one type of benefit (for example, a wage-loss benefit) is designed to compensate work disability and the other type relies on a schedule to provide additional benefits. Here the function of the scheduled benefits is to serve as a proxy for the worker's losses (other than earnings losses) caused by the permanent impairments and the resulting functional limitations and nonwork disability (PIFLIND). In this scheme, the amount of the scheduled benefits depends on the seriousness of the worker's impairment plus the value assigned by the jurisdiction to various levels of severity.

Scheduled benefits can also serve multiple purposes. A jurisdiction may decide that the rationales for permanent disability benefits include work disability, permanent impairments, functional limitations, nonwork disability, and even pain and suffering (or any combination of two or more of these permanent consequences). There is no conceptual reason why a single type of scheduled benefit cannot serve all of these purposes, where the function of the scheduled benefits is to serve as a proxy for all of the consequences that merit compensation. Needless to say, such a schedule presents a formidable design task, and, in light of the demonstrated failure of the schedule to serve as an adequate proxy just for work disability, seems foolhardy.

The purpose of this section is not to provide the definitive treatise on all the possible uses of scheduled benefits. The purpose is to make a basic point, namely that the role of scheduled benefits in a particular jurisdiction depends on decisions on: (1) which of the permanent consequences of work-related injuries warrant compensation? (2) will the scheduled benefits stand alone or will they be coupled with other types of permanent disability benefits? Until these decisions are made, proper design of the scheduled benefits is impossible.

IV. Evaluation of Three Possible Schedules for Ontario

This section compares three schedules that could be used in the Ontario workers' compensation program. The American Medical Association's *Guides to the Evaluation of Permanent Impairment*, referred to here as the *AMA Guides*, is the most widely known schedule. A second edition of the *AMA Guides*, issued in 1984, contains 245 pages that consist of 12 chapters covering the various body systems plus a forward and several appendices. The volume contains extensive material on the techniques of measurement and the extent of impairment associated with the various measurements. For example, Chapter 1, which deals with the extremities, spine, and pelvis, contains 59 pages with 80 figures illustrating measurement techniques and 53 tables containing impairment ratings.

The *Permanent Disability Rating Schedule* is currently used in the Ontario workers' compensation program. The schedule was issued in 1972, and contains 16 pages of printed material (not counting blank pages) that consist of 11 pages of text plus 4 charts and 1 table. The *Rating Schedule* primarily consists of lists of specific impairments with corresponding ratings. There are no explanations of measurement techniques, although the four charts provide guidance about how to rate hands and the one table indicates how loss of vision is rated. Most of the *Rating Schedule* (7 and 1/2 pages of text plus the four charts) pertain to the extremities and spine. The other body systems are covered in 2 and 1/2 pages of text plus the table.

The Medical Services Division of the Ontario Workers' Compensation Board has reviewed the current *Rating Schedule* and proposed an alternative schedule entitled *Guidelines for the Evaluation of Permanent Impairment*. The 1985 draft contains 46 pages plus an introduction. The *MSD Proposed Guidelines* contain brief instructions for use of the guidelines plus ratings for various impairments. The *MSD Proposed Guidelines* are between the *AMA Guides* and the *Rating Schedule* in extent of coverage. For example, the extremities, spine, and pelvis are covered in 59 pages in the *AMA Guides*, in 7 and 1/2 pages plus a chart in the *Rating Schedule*, and in 9 pages in the *MSD Proposed Guidelines*.

A. Purposes of Scheduled Benefits

The three schedules just described can be evaluated in terms of their possible uses in the Ontario workers' compensation program, both in the current law and in a restructured law.

1. Present law. Section 45(1) of the present law provides lifetime compensation for a worker with a permanent disability, with the weekly benefit proportionate to the worker's impairment of earning capacity. Section 45(3) authorizes the Board to "compile a rating schedule of percentages of impairment of earning capacity for specified injuries or mutilations that may be used as a guide in determining the compensation payable," and based on this authority the Board has issued the *Rating Schedule*. The rating from the schedule is combined with information on the worker's preinjury wage to determine the weekly amount of the lifetime pension. The apparent purpose of these scheduled benefits is to compensate the worker for the work disability that is expected to result from the injury.

The current schedule is not well adapted to predict the amount of wage loss the worker can be expected to experience during the balance the worker's life since the schedule only measures the extent of impairment (as Section I defines that term) and uses that measurement as a proxy for subsequent wage loss. As previously indicated, such prospective benefit schemes are demonstrably inequitable: benefits are not well matched to workers with actual earnings losses.

There is no reason to believe that the adoption of the *AMA Guides* or the *MSD Proposed Guidelines* would improve the ability of the Ontario workers' compensation program to provide equitable benefits under Section 45(1) since those schedules also are confined to the rating of impairments, not work disability. There may be other reasons (discussed below) to adopt one of those schedules in place of the current *Rating Schedule*, but the ability to match benefits to subsequent wage loss is not likely to improve.

2. A Possible Law with Two Tracks of Permanent Disability Benefits. If Ontario were to adopt a two-track benefit scheme for injuries with permanent consequences, and one of the tracks was explicitly designed to compensate impairments (or PIFLIND), then the use of any one of the three schedules would make more sense. That is, the *Rating Schedule*, the *AMA Guides*, and the *MSD Proposed Guidelines* all are designed to determine the extent of impairment, not the extent of work disability. Even for this use, there is a need for careful studies to determine the degree of correlation between the ratings and the actual disutility associated with workers' impairments, functional limitations, or nonwork disabilities.

B. Operational Characteristics of the Three Schedules

The three schedules can also be evaluated in terms of their operational characteristics. Regardless of the purpose for which a schedule is used, it should be based on clear concepts and be comprehensive, comprehensible, consistent, and acceptable. The *AMA Guides* clearly excel on these criteria.

1. Clear concepts. One goal in designing a schedule is to make clear exactly what concept is to be measured: is the schedule meant to measure impairment (a medical concept) or to measure work disability (an economic concept)? Unless the purpose is clear, those who are asked to use the schedule – doctors, administrators, or policymakers – are bound to be confused.

The Glossary of the *AMA Guides* contains clear definitions of impairment and disability. ("Impairment is the loss of, loss of use of, or derangement of any body part, system or function." "Disability is the limiting loss or absence of the capacity of an individual to meet personal, social, or occupational demands, or to meet statutory or regulatory requirements.") These definitions are consistently used throughout the *AMA Guides*, and the role of the physician, which is to evaluate impairments but not disability, is stressed in the Preface.

The current *Rating Schedule* contains no definitions of impairment or disability. The Introduction to the *MSD Proposed Guidelines* includes definitions of permanent impairment and permanent disability that are very similar to the definitions in the *AMA Guides*. The introduction then notes that although the Ontario Workers' Compensation Act does not define permanent impairment, Section 45(12) defines permanent disability as "any physical or functional abnormality or loss, and any psychological damage arising from such abnormality or loss, after maximal medical rehabilitation has been achieved." The Introduction then notes that:

> For practical purposes the Ontario Workers' Compensation Board used the previously defined terms for 'permanent impairment' and 'permanent disability'. In doing so, we are consistent with other jurisdiction including the American Medical Association in our approach to the evaluation of permanent impairment.

The problem with this passage is that the definition of permanent disability contained in the *AMA Guides* and the definitions provided in the Introduction to the *MSD Proposed Guidelines* are totally inconsistent with the definition in Section 45(12). That statutory definition of permanent disability is precisely what the *MSD Proposed Guidelines* called on the same page "permanent impairment." The present statute is perfectly legal – obviously Ontario can define permanent disability anyway it wishes – but the definition is not consistent with usage elsewhere, and this inconsistency is bound to confuse the user of the *MSD Proposed Guidelines*, which adopt both definitions.

2. Comprehensive. A schedule should also be comprehensive in terms of the range of impairments included and in the number of ratings for various levels of severity for a given impairment. The *AMA Guides* provides extensive coverage of impairments to various body systems, including, for example, separate chapters for the reproductive and urinary systems, the endocrine system, the skin, and mental and behavioral disorders. The extensive levels of ratings possible for a particular part of the body are illustrated by the coverage of the spine, which consists of 12 pages that include 8 numbered tables, 3 unnumbered tables, and over 100 different impairment ratings for different disorders of the spine.

The current *Rating Schedule* provides sparse coverage of possible impairments. Impairments involving body systems other than the extremities, spine, and pelvis are covered in 2 and 1/2 pages plus a table. For the spine, there are four lines of material that provide three possible impairment ratings.

The *MSD Proposed Guidelines* provide much more extensive coverage than the present *Rating Schedule*, but are not as comprehensive as the *AMA Guides*. For example, there is no treatment of ear, nose, throat and related structures in the *MSD Proposed Guidelines*, while the *AMA Guides* devote a chapter to the topic. The digestive system also receives a chapter in the *AMA Guides*, but only 6 lines in the *MSD Proposed Guidelines*. For the spine, the *MSD Proposed Guidelines* devote two pages that include 16 possible impairment ratings (10 of which have ranges of at least 10 percent).

3. Comprehensible. A schedule should also be usable by all interested parties, including treating physicians, on the basis of instructions contained in the schedule. It should not be necessary for a user to rely on unstated premises or knowledge in order to make impairment ratings.

The *AMA Guides* strive to be comprehensible. As the Preface indicates, "Uniform, reproducible methods of determining impairment are explained and illustrated with examples." Steps and procedures for rating permanent impairments are provided in the Preface, and measurement techniques are featured throughout the volume.

The *Rating Schedule* provides some assistance to the user for certain impairments, particularly the hand, which receives all four charts and 5 of the 11 pages of text. For other impairments, there is no guidance to the application of the rating schedule. For example, a 30 percentage rating is assigned to cervical and/or thoracic disorders of the spine, but no guidance of how to rate these disorders is provided.

The *MSD Proposed Guidelines* provide some guidance to the application of the schedule. However, the Introduction indicates there are two types of evaluations of permanent impairment made by Board physicians: (1) those "ratings which are clearly defined in the guidelines" for which "the worker is usually assessed at the percentage shown," and (2) those "judgment ratings which are based on a combination of values in these guidelines and extensive experience in the field of impairment evaluation." It is evident that an outsider could not comprehend how to apply the guidelines to all types of disorders. The need for knowledge that exceeds the explicit instructions in the schedule is evident for rating of the impairment of the spine. The examining physician is instructed to take five factors into account, one of which is "the limitations of activities imposed by the disorder of the spine." There is no indication of what these activities are. Do they include lifting, climbing, and the other aspects of functional limitations, as that term was defined in Section I of this report? Do they include activities at the workplace (work disability)? Do they include recreation or household tasks (nonwork disability)?

4. Consistency. The schedule should produce consistent ratings when the same worker is rated by different physicians, or when different workers with equivalent impairments are rated by one or more physicians. The ability of a schedule to satisfy this criterion is closely related to some of the previous discussion, such as whether the schedule is comprehensive and comprehensible.

The Preface to the *AMA Guides* asserts that "when they are used properly, permanent impairment can be rated with reasonable accuracy and uniformity." It would be naive to believe that complete consistency will result from use of the *AMA Guides*. One of the obstacles to consistent ratings of the spine is the handling of pain. The *AMA Guides* at p.73 provide three instances in which pain should be considered by the rating physician and then states that "complaints of pain that cannot be substantiated as above are not considered within the scope of this chapter." This is an attempt to limit the subjective evaluation of pain, which is a potential source of inconsistent ratings. However, one of the three acceptable instances for considering pain is "how the pain interferes with the individual's performance of the activities of daily living," which leaves considerable discretion to the physician.

The ability of the *Rating Schedule* to produce consistent ratings is questionable for many disorders. For example, there are only three percentage ratings for disorders of the spine, with almost no guidance as to how the ratings are to be determined. The *MSD Proposed Guidelines* are an improvement, although consistency for certain impairments will be difficult to achieve. The five factors to be considered in rating spinal injuries include "the intensity and frequency of symptoms," which will leave considerable discretion to the physician in evaluating the contribution of pain to the rating.

5. Acceptable. The values for the various impairments must be accepted by the various constituencies of the workers' compensation program, including treating physicians, employers, unions, and administrators. Acceptability in part depends on the origins of the relative values and in particular whether there is some "scientific" basis for the ratings.

The basis for the relative values for the various impairments in the *AMA Guides* is not clear from the publication. The values appear largely to reflect the collective judgement of the physicians who prepared the guides. The effort began in 1956 when the Board of Trustees of the AMA created an *ad hoc* committee to prepare practical guides for the rating of physical impairment. From 1958 to 1970 the committee published 13 separate guides in the *Journal of the American Medical Association*. In 1971, the guides were published in a single volume as the *AMA Guides*. In 1982, the American Medical Association began a review of the guides that culminated in the 1984 publication of the second edition of the *AMA Guides*. There is no obvious evidence of manipulation of the relative values for political or other arbitrary reasons. Indeed, there is a considerable consistency between the ratings in the first and second editions of the *AMA Guides*. (The second edition does provide additional material to assist in the determination of particular ratings, including four new tables assigning impairment ratings to orthopedic conditions not previously mentioned.)

The *Rating Schedule* contains relative values that reflect an historical evolution from the original 1915 schedule. The current version was issued in 1972. The *Rating Schedule* was reviewed in 1985 by a group established by the Executive Directors of the Medical Services Division and the Claims Services Division. The *Review of Workers' Compensation Permanent Disability Rating Schedule* prepared by the group found numerous differences between the ratings in the current Ontario schedule and the ratings in the *AMA Guides* and those in other jurisdictions. Also, there were numerous omissions in the *Rating Schedule* compared to these other schedules.

The *MSD Proposed Guidelines* make a number of changes in relative values for various disorders. The guiding principle appears to have been to increase the Ontario ratings when they were below those in the *AMA Guides* or in the schedules in other provinces and to continue the values in the *Rating Schedule* when they were above those in the other schedules. Thus, the *AMA Guides* provide 30 percent for an ankylosed elbow while the *Rating Schedule* provides 20 percent; the *MSD Proposed Guidelines* would rate the ankylosed elbow at 25 percent. Similarly, the *AMA Guides* provide 8 percent for the amputation of all toes, while the *Rating Schedule* provides 5 percent; the *MSD Proposed Guidelines* use a 7 percent rating. In contrast, the *AMA Guides* provide 28 percent for an ankylosed hip; the *Rating Schedule* provides 30 percent, which the *MSD Proposed Guidelines* would continue. And the *AMA Guides* provide 40 percent for amputation of the leg at the hip; the *MSD Proposed Guidelines* would continue the 65 percent rating found in the *Rating Schedule*. Thus the adjustments to the *Rating Schedule* ratings in the *MSD Proposed*

Guidelines appear to reflect a view that all is well with the Ontario ratings – except when they are too low. Surely some interested parties in Ontario will notice this attribute of the *MSD Proposed Guidelines* and not be enamored.

6. Conclusions on Operational Characteristics. The three schedules have been compared on the basis of whether they are conceptually clear, comprehensive, comprehensible, consistent, and acceptable, and the *AMA Guides* are generally superior. Whether this superiority on operational characteristics means that the *AMA Guides* should be adopted by the Ontario Workers' Compensation Board depends on other considerations that are discussed in the next section.

V. Conclusions and Recommendations

The *Permanent Disability Rating Schedule* currently used by the Ontario Workers' Compensation Board is deficient in terms of both purpose and operational characteristics. The *Rating Schedule* is used to determine the weekly benefit amounts for the lifetime benefits provided by Section 45(1). Thus the apparent purpose of the schedule is to help predict the lost wages (work disability) that the worker is expected to experience after the date of maximum medical recovery. The schedule undoubtedly does a poor job of serving this purpose, since the only basis for the rating is the worker's impairment (a medical condition) and such ratings are notoriously poor predictors of earnings losses.

The *Rating Schedule* also has serious operational deficiences, as documented in the previous section. With all these failings, should the *Rating Schedule* be replaced with the *AMA Guides*, the *MSD Proposed Guidelines*, or some other schedule? In order to answer this question, it is useful to distinguish between a short-run context and a long-run context, as those periods were delineated in the Introduction.

A. Reform in the Short-Run Context

The short-run is the period before fundamental reforms are made in the permanent disability benefits in the Ontario workers' compensation program. The current language of Section 45 would be maintained (except that minor changes might be made, such as inserting definitions of "permanent impairment" and "permanent disability" that are consistent with modern usage of those terms).

There would be advantages to the adoption by the Ontario Workers' Compensation Board of the *AMA Guides* in place of the current *Rating Schedule* or instead of the *MSD Proposed Guidelines*. The advantages all pertain to the operational characteristics of a schedule discussed in the previous section. However, adoption of any new schedule in the short-run (whether the *AMA Guides* or the *MSD Proposed Guidelines* or any other schedule) should not be considered more than a temporary expedient until more fundamental reforms are completed. Moreover, it must be stressed that adoption of a new schedule, such as the *AMA Guides*, may be incompatible with the schedule that is needed after the fundamental reforms are completed.

B. Reform in the Long-Run Context

If there is a fundamental restructuring of permanent disability benefits, then the role of scheduled benefits will need to be thoroughly re-examined. I presume that such restructuring will occur because of the impetus provided by the Weiler reports and by the endorsements from various political viewpoints in Ontario of the need for basic change.

The problem for deciding whether the adoption now of the *AMA Guides* (or any schedule) represents a logical step towards long-run reform is that the appropriateness of a particular schedule depends on factors still unknown in Ontario. It is one thing to accept the idea that fundamental reform of permanent disability benefits is going to occur in Ontario. It is quite another to know the crucial parameters of that reform, which will dictate the kind of schedule that is appropriate. As indicated in Section III, the role of the scheduled benefits depends on (1) the purpose or purposes of the permanent disability benefits (which permanent consequences warrant compensation) and (2) whether the scheduled benefits stand alone or are coupled with other types of permanent disability benefits.

If, for example, Ontario adopts a two-track benefit system (similar to Saskatchewan), then the scheduled benefits are meant to compensate permanent impairment (or PIFLIND). For that purpose, a rating scheme that evaluates impairments (such as the *AMA Guides*) makes sense.

However, if Ontario were to adopt a hybrid system of benefits (similar to the New York benefits used for serious injuries to major members, in which scheduled benefits are followed by wage loss benefits), then the scheduled benefits are meant to compensate work disability. For that purpose, the *AMA Guides* (or the current *Rating Schedule* or the *MSD Proposed Guidelines*) make less sense. These are only two illustrations of how the fundamental restructuring of permanent disability benefits might proceed, but they suffice to make clear that any particular schedule may not be compatible with the variant of reform that is selected.

C. Recommendations

If any revised schedule is adopted now, I would recommend the *AMA Guides* because of the superior operational characteristics of that schedule.

In the long-run context, the choice of a schedule should *follow* decisions about the purposes of the benefits (which permanent consequences warrant compensation) and about the structure of the benefits (how many tracks of benefits are created).

The relationship between the ratings and the permanent consequences they purport to predict warrants additional research. The ratings produced by existing schedules have been shown to be poorly correlated with subsequent wage loss, but rating schemes that incorporate factors such as age and education along with impairment ratings may do better. The ability of the *AMA Guides* or similar impairment rating schemes to predict the extent of nonwork disability resulting from various injuries should also be investigated. Information from such research would be a valuable input to improved schedules.

There is no clearly superior choice between the option of adopting the *AMA Guides* (or some other new schedule) now and the option of adopting a new schedule at the same time the fundamental reforms are enacted. The advantage of the first choice is the resulting improvement in operational characteristics of the *AMA Guides* compared to the present schedule. The disadvantage is that action now may deflect attention from the need for a thorough overhaul of the permanent disability benefits in the Ontario workers' compensation program.

APPENDIX A-1

APPENDIX TO

The Role of the Permanent Disability Rating Schedule in the Ontario Workers' Compensation Program

A Report Prepared for the
Ontario Workers' Compensation Board
(August 1986)

The Appendix consists of:

John. F. Burton, Jr., "Compensation for Permanent Partial Disabilities", which is Chapter 2 of John D. Worrall, ed., *Safety and the Work Force: Incentives and Disincentives in Workers' Compensation* (Ithaca, New York: ILR Press, Cornell University, 1983)

2 · COMPENSATION FOR PERMANENT PARTIAL DISABILITIES

John F. Burton, Jr.

Permanent partial disability benefits are the most controversial and troublesome aspect of the workers' compensation program in many United States jurisdictions. These benefits are paid to workers who, after maximum medical recovery, continue to have losses of actual earnings or of earning capacity as a result of their work-related injuries or diseases. Although permanent partial disabilities account for less than 25 percent of all cases paying cash benefits, they account for more than 60 percent of all dollars expended on cash benefits (Price 1979, table 5) and probably account for an even higher percentage of cases that involve serious controversies and litigation.

The discussions of terminology, existing compensation systems, and a proposed hybrid system are based in part on an earlier study by Burton (1978); a more extended treatment of some of the topics in these sections is included in Burton and Vroman (1979), which in turn draws on material from a research project supported by the National Science Foundation (NSF) under the title "An Evaluation of State Level Human Resource Delivery Programs: Disability Compensation Programs." A final report was submitted to the National Science Foundation in 1979. Monroe Berkowitz and John F. Burton, Jr., were principal investigators for the NSF project, and Wayne Vroman had primary responsibility for the wage-loss study component of the project.

I appreciate the comments on an earlier draft by Richard J. Butler, Arthur Larson, Eric Oxfeld, and John D. Worrall; the data collecting and computational assistance of Mark Pettitt and Dane Partridge; and the typing by Nancy Voorheis. I assume responsibility for remaining errors — J.F.B.

This paper investigates the incentive and disincentive effects of the various approaches to compensating permanent partial disabilities. It examines the criteria used to provide permanent partial benefits in several United States jurisdictions, with particular scrutiny given to the wage-loss approach of the Florida and New York workers' compensation programs.

A Conceptual Framework

An obstacle to a national analysis of permanent partial disability benefits is that the concepts on which benefits are based and even the terms used to describe the same concept vary among the states. This discussion assumes that a worker experiences a work-related injury or disease that results in permanent consequences. *Permanent* in this context means continuing beyond the point when maximum medical rehabilitation or maximum medical improvement (MMI) has been reached.

The first permanent consequence is an *impairment*, defined as "any anatomic or functional abnormality or loss after maximum medical rehabilitation has been achieved" (American Medical Association 1971). Examples of impairments are an amputated limb or an enervated muscle. The impairment probably causes the worker to experience *functional limitations*. Physical performance may be limited in such activities as walking, climbing, reaching, and hearing, and in addition, the worker's emotional and mental performance may be limited (Nagi 1975). *Disaggregated functional limitations* and *aggregated functional limitations* should be distinguished. The distinction concerns the level of affected activity. The disaggregated functional limitations are relatively specific consequences of the impairment, e.g., loss of degrees of motion of a toe joint. Aggregated functional limitations are more general consequences, e.g., loss of ability to walk.

Functional limitations, in turn, are likely to result in *disability*, which is used here to mean "inability or limitations in performing social roles and activities such as in relation to work, family, or to independent community living" (Nagi 1975). Two types of disability should be recognized: *work disability*, a loss of earning capacity or loss of actual earnings as a result of the functional limitations, and *nonwork*

disability, loss of the other capacities implied in the broad definition of disability (such as limitations on various aspects of family life, including recreation and the performance of household tasks).

Work disability can be conceptualized as either *the loss of earning capacity* or the *actual loss of earnings*. In a strict sense, these two aspects of work disability must accompany one another. An actual loss of earnings only occurs if there is a loss of earning capacity. Nevertheless, the distinction is important because some types of workers' compensation benefits are based solely on a determination of a *presumed* loss of earning capacity, without regard to the existence or extent of actual lost earnings.

The extent of work disability and nonwork disability for a given worker depends not only on the extent of functional limitations but also on other influences. For example, the loss of actual earnings or decrease in earning capacity depends not just on functional limitations, but also on the worker's personal characteristics (e.g., age and education), the labor market conditions in which he or she must compete for employment, and the available sources of assistance, e.g., cash benefits and medical care.

The actual loss of earnings resulting from a work-related injury or disease is further analyzed with figure 2.1. The horizontal axis represents time, and the vertical axis measures earnings. In the case illustrated in figure 2.1, the worker had wages increasing through time from *A* to *B,* corresponding to the worker's higher productivity and general increases in the prices and wages. At point *B,* the worker experienced a work-related injury that permanently reduced his earnings. If the worker had not been injured, his earnings would have continued to grow along the line *BC*. Although these potential earnings cannot be observed, they can be estimated from information such as the worker's pre-injury earnings, age, occupation, and work experience. The worker's actual earnings can be significantly affected by the work-related injury. In this example, the actual earnings drop from *B* to *D* (which corresponds to zero earnings) and continue at this zero earnings level until point *E,* when the worker returned to work at wage level *F*. Thereafter, actual earnings grow along the line *F* to *G*. It is assumed that the worker's actual earnings never return to the potential earnings (line *BC*) that he would have earned if he had never been injured. Not all workers with permanent impairments or per-

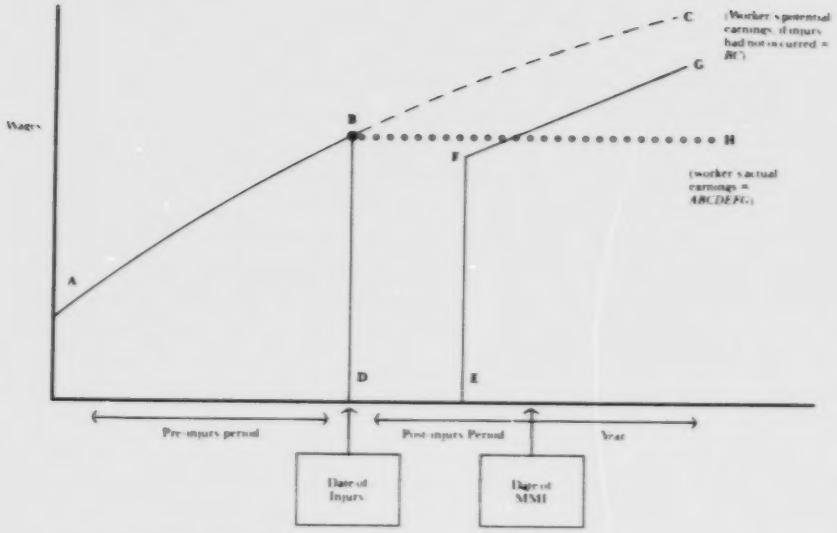
manent functional limitations have this wage history. Some workers may return to their old jobs at the wages they would have earned if they had never been injured. Other workers may experience a total loss of earnings after their injuries. Thus the example shown can be considered an intermediate case for workers who experience permanent consequences of injuries or diseases, in that the worker has a partial but not total loss of earnings.

The measure of earnings loss used so far corresponds to what is labeled on the figure as *true* wage loss. This measure of wage loss is equal to the worker's potential earnings after the date of injury (*BC*) minus the worker's actual earnings after the date of injury (*BDEFG*). Although this definition of wage loss is appropri. te for many purposes, including the assessment of the total consequences of a work-related injury, it is not the measure of wage loss typically encompassed in a workers' compensation statute. Rather, the statute will measure what is termed *restricted wage loss:* that is, the worker's earnings as of the date of injury, which were at level *B*, are projected into the future at that level, namely along the line *BH*. Then the wage loss that serves as a basis for workers' compensation benefits is measured as the difference between the line *BH* and the worker's actual earnings after the date of injury (*BDEFG*). As is obvious, the restricted wage loss is smaller than the true wage loss. Indeed, in the present example, there is a date where the actual earnings line *FG* crosses the line *BH*, which means there is no additional restricted wage loss after this date even though there is continuing true wage loss.

The final noteworthy point in the figure is the date when the worker has achieved maximum medical improvement.[1] Permanent disability cases are defined as those for which the worker has consequences that extend beyond this date, and the date of maximum medical improvement is when the worker's medical condition is considered stable enough that he or she can be rated for the purposes of determining the permanent disability benefits. In the case illustrated,

1. The date of maximum medical improvement (MMI) is the terminology used in Florida. The corresponding term in California is the date the injury is permanent and stationary. Virtually every state uses the concept, at least implicitly. It is the earliest date at which the worker can be evaluated to determine his or her eligibility for permanent disability benefits.

FIGURE 2.1
The Loss of Actual Earnings
for a Worker with
a Permanent Disability



MMI = maximum medical improvement

"True" wage loss = potential earnings after injury (*BC*) minus actual earnings after injury (*BDEFG*)

Restricted wage loss = wage at industry projected into post-injury period without escalation (*BH*) minus actual earnings after injury (*BDEFG*)

the date of maximum medical improvement is after the date when the worker returned to work, a typical sequence.

Why Pay Permanent Partial Disability Benefits?

Why do we pay permanent partial disability benefits in the workers' compensation program? More precisely, which of the four consequences of a work-related injury provide the rationale for this kind of benefit? (For an extended discussion, see Burton and Vroman 1979.)

Commentators on workers' compensation generally have not considered the question using a conceptual framework as elaborate as the one used here, and so the answer to the question is complicated. A greater obstacle to ferreting out the purpose of the benefits is that, because the consequences of injuries are sequential and interdependent, a particular consequence may be endorsed as a basis for compensation because it serves as a convenient proxy for other consequences of primary concern. Thus a writer may argue that impairments should be compensated when the real concern is for work and nonwork disabilities that flow from the impairments. This indirect route to compensating disabilities may be chosen because impairments may be easier to measure than disabilities. Unfortunately, the commentators who favor payment for impairments do not always make clear whether this payment is for the existence of an impairment in itself or as a proxy for disability.

To the extent the rationale for permanent partial benefits is discernable, however, two schools of thought can be identified. One, exemplified by Arthur Larson (1973), considers work disability as the sole justification for workers' compensation benefits. He recognizes that some jurisdictions pay benefits on the basis of evaluations of the extent of impairment, but argues that when such evaluations are made, wage loss is conclusively presumed. The jurisdiction, in short, compensates the impairment because it serves as a proxy for work disability.

A second view of the rationale for permanent partial benefits is exemplified by the National Commission on State Workmen's Compensation Laws. The commission, in the 1972 report, concluded that the "primary basis" for permanent partial benefits should be work disability. The commission, however, also felt there was a secondary

role for what it termed "impairment benefits," where the apparent purpose of the benefits was not only to compensate impairment per se but to use impairment as a convenient proxy for the functional limitations and nonwork disability that resulted from the impairment (Burton and Vroman 1979).

While not the only approaches to the question of compensability that have been offered, the views of the commission and of Larson are typical, however, in arguing that work disability should be the primary, if not the exclusive, basis for permanent partial benefits. Work disability as the dominant rationale for such benefits is used later in this study as an aid to evaluating the performance of the workers' compensation program.

How Do Workers' Compensation Programs Determine Compensation?

The previous discussion considered the theoretical rationale for permanent partial benefits. I now examine which of the consequences of work-related injuries and diseases are actually considered in determining the amount of workers' compensation benefits. Five approaches can be identified (for an extended discussion, see Burton and Vroman 1979).

Benefits Based on Impairments. The loss or abnormality aspect of impairment can serve as the sole or primary basis of permanent partial benefits. For example, the statutes in Washington and Oregon base some benefits solely on the extent of the impairment, and all workers with the same impairment receive the same dollar amount. The schedules for permanent partial benefits found in most statutes usually list injuries for which the extent of the underlying loss (impairment) is the primary but not sole basis for benefits. For example, the Michigan Workers' Compensation Act provides sixty-five weeks of benefits for the loss of a thumb, with each week's benefit set at two-thirds of the worker's average weekly wage (subject to a statutory maximum).

Benefits Based on Disaggregated Functional Limitations. The typical workers' compensation schedule contains, in addition to a list of injuries involving amputations, a list that relates benefits to the loss of use

of specific body members. Thus, the New York law provides that "compensation for permanent partial . . . loss of use of a member may be for proportionate . . . loss of use of the member." The loss of use provisions are an example of benefits based on disaggregated functional limitations.

Benefits Based on Aggregated Functional Limitations. The California program has developed work-capacity guidelines to rate the severity of certain types of injuries considered hard to evaluate, such as spinal and heart injuries. These guidelines have eight levels, or plateaus, of severity, some of which are stated in terms of aggregated functional limitations. For example, plateau C is defined as contemplating that "the individual has lost approximately half of his pre-injury capacity for performing such activities as bending, stooping, lifting, pushing, pulling and climbing, or other activities involving comparable physical effort." This is an example of permanent partial benefits based on aggregated functional limitations.

Benefits Based on the Loss of Earning Capacity. In many jurisdictions nonscheduled permanent partial benefits are based on the loss of earning capacity. This loss of capacity results from the worker's functional limitations interacting with other influences such as age, education, and state of the labor market. Most statutes provide little or no guidance about how to evaluate these factors.

Benefits Based on the Actual Loss of Earnings. In a few jurisdictions, certain types of injuries are assessed in terms of their consequence on the actual earnings of the workers in order to determine the amount of benefits. This wage-loss approach is found in only a few jurisdictions, and even where found the execution is likely to be less than pristine. Several criteria can be used to identify a "pure" wage-loss approach. First, for an extended period of time after the date of maximum medical improvement, actual earnings are compared with potential earnings to determine if there is wage loss.[2] Second, if wage loss occurs during this period, then the amount of the permanent partial disabil-

2. The comparisons between actual and potential earnings could depend on monitoring by the state workers' compensation agency, or could depend on the worker or employer presenting data to establish the amount of wage loss.

ity benefits paid is related to the extent of the wage loss. Third, if no wage loss occurs during this period, then no permanent partial disability benefits will be paid.

A pure or virtually pure wage-loss approach is found in only a few jurisdictions. The 1979 Florida law that adopted a wage-loss approach for permanent partial disabilities and the New York nonscheduled permanent partial disability benefits are examined later. Pennsylvania also apparently uses the wage-loss approach.[3] There are no other verified sightings.

Michigan was cited by the report of the national commission (1972, p. 69) as using the wage-loss approach, and I have previously classified Michigan that way (Burton and Vroman 1979). Moreover, Michigan has recently been praised for its decision "to compensate for actual wage-loss only" (Devers 1981). But under the criteria just provided for identifying a pure wage-loss approach, Michigan appears to be a sullied wage-loss approach at best. The reason is the widespread use of compromise and release agreements (redemptions) that provide workers a lump sum settlement in exchange for the extinction of their right to claim continuing wage-loss benefits.[4] Use of a compromise and release agreement violates all three criteria for a pure wage-loss system and in effect converts the benefits into the approach based on loss of earning capacity, since the size of the lump sum settlement probably is based on an estimate of the likelihood and amount of future earnings losses.[5]

The five operational approaches to permanent partial benefits can be related to the distinction between scheduled and nonscheduled benefits found in most workers' compensation statutes. Each statute contains a list of injuries with a corresponding duration of benefits. The scheduled benefits are based on impairments or disaggregated functional limitations, the first two approaches described above (only

3. Arthur Larson, however, does not classify Pennsylvania as a pure wage-loss statute (1973, section 57.14(a), note 47).

4. During the field work for the NSF research project, a sample of files was examined for workers with permanent injuries who received Michigan workers' compensation benefits. Redemption settlements were found in a high proportion of all cases that involved nontrivial injuries.

5. For different reasons, Larson (1973) also does not classify Michigan as a wage-loss state. Indeed, he puts "it almost at the opposite pole from any actual wage-loss theory."

the unique California schedule uses other schemes in addition to the two approaches used elsewhere). Each statute also contains a general provision pertaining to injuries that cannot be rated by use of the schedule. One variant of nonscheduled benefits is based on the loss of earning capacity, the fourth approach described above. The other variant of nonscheduled benefits requires an evaluation of the seriousness of the permanent consequences of the injury compared to a "whole man." In practice, the whole man assessment considers impairments, disaggregated function limitations, and perhaps aggregated functional limitations in determining a rating. Either variant of nonscheduled benefits produces a rating (e.g., 25 percent), which is applied to a maximum duration corresponding to 100 percent (e.g., 500 weeks), to determine the duration for the nonscheduled permanent partial disability benefits (e.g., 125 weeks).

I will make three observations about the various approaches to compensating the permanent consequences of work-related injuries and diseases. First, although the primary rationale for permanent partial benefits is work disability and presumably the most compelling aspect of work disability is the actual loss of earnings, there is widespread reliance at the operational level on some of the other consequences of injury or disease as the basis for determining benefits. These operational bases such as impairment are presumably serving as a proxy for the actual losses of earnings that are expected to occur.

Second, with the exception of the wage-loss approach, the decision about the amount of permanent partial benefits to be paid is made after the medical condition has stabilized but before most or all of the actual wage loss for which the benefits are intended occurs. In short, permanent partial benefits are largely based on proxies for the expected actual wage loss that are assessed on an *ex ante* basis (that is, before the period when wage loss actually occurs). Whether the *ex ante* proxy approach works is considered in the next section.

Third, there is a tendency to confuse the various approaches, in particular the fourth and fifth approaches. A number of times I have heard a state's law described as involving a wage-loss approach, when the basis for benefits was not actual loss of earnings (the fifth approach) but loss of earning capacity (the fourth approach). The crucial distinction is whether the permanent partial benefits are paid on an *ex post* basis as actual wage loss occurs (the fifth approach) or are

paid on an *ex ante* basis with the amount determined by an estimate of loss of earning capacity.

Does Workers' Compensation Provide Benefits to Those with Wage Loss?

Whether the workers' compensation program provides benefits to those workers with actual losses of earnings is one of the basic questions that was examined in a study sponsored by the National Science Foundation. (See Berkowitz, Burton, and Vroman 1979, part III; for summary of results, see Burton and Vroman 1979.) It made use of samples of workers injured in 1968 who received permanent partial disability benefits in California, Florida, or Wisconsin. Information was obtained from the state workers' compensation agencies concerning the workers' personal characteristics, such as age and sex, the nature and severity of the workers' injuries, the amount and timing of the workers' compensation benefits received by the workers, and the administrative procedures used to provide the benefits, including information on whether lawyers were used. The workers' gross earnings from 1966 to 1973 were obtained from Social Security Administration (SSA) records. Data on fringe benefits and taxes were unavailable.[6]

Information on each worker's earnings in 1966–67 was combined with earnings data for workers in a control group of the same age and sex to produce an estimate of *potential* post-injury earnings from 1968 to 1973 that the worker could have been expected to earn. The worker's *actual* post-injury earnings from 1968 to 1973 shown in the SSA records were then subtracted from the estimated potential post-injury earnings to produce an estimate of earnings losses caused

6. The proper measure of the worker's economic loss from a work-related injury or disease is the difference in net remuneration before and after the disability. "This comparison reflects factors that are affected by disability such as taxes, work-related expenses, some fringe benefits which lapse, and the worker's uncompensated expenses resulting from the work-related impairment" (National Commission 1972, p. 37). The absence of data on fringe benefits in the SSA earnings records means that losses of net remuneration are understated; the absence of tax data means losses are overstated. For a discussion of these and related issues, see Berkowitz, Burton, and Vroman (1979), chap. 17.

TABLE 2.1
Earnings Losses and Workers' Compensation Benefits, Male Workers Injured in 1968

	Potential Earnings, 1968–73	Earnings losses, 1968–73	Earnings Losses as % of Potential Earnings	Workers Compensation Cash Benefits, 1968–73	Benefits as % of Earnings Losses
Wisconsin					
Uncontested	$42,892	$ 2,519	5.9%	$2,150	85%
Contested	40,346	8,826	21.8	5,128	58
Florida					
Regular	37,023	190	0.5	1,372	724
Contested	32,733	6,898	21.1	3,534	51
California					
Informal	45,436	. .	. .	2,032	. .
Formal	40,144	10,633	26.5	4,934	46
"Other WCAB"	38,683	7,166	18.5	2,905	41

Note: All figures are averages (means) for the workers in the sample. Additional information is contained in Burton (1978), Berkowitz, Burton, and Vroman (1979), and Burton and Vroman (1979).

by the work-related injury. (This corresponds to an estimate of true wage loss, as defined in figure 2.1.)

Table 2.1 shows the summary data for workers in the male samples for the three states. As an example, the Wisconsin male uncontested cases had mean earnings losses of $2,519 over the 1968–73 period, which was 5.9 percent of the potential earnings of $42,892 during the period. The cases that did not involve a hearing before an administrative law judge or the use of a compromise and release agreement (the Wisconsin uncontested cases, the Florida regular cases, and the California informal cases) experienced less wage loss on average than the generally more serious cases in the other samples. The most serious wage losses were experienced by workers in California who received formal disability ratings from the rating bureau: their mean losses of $10,633 represented 26.5 percent of the potential earnings of $40,144.

Workers' compensation benefits can be related to these earnings losses. Table 2.1 also shows the total of all types of workers' compensation cash benefits (after legal fees) received by the workers during the 1968–73 period and the percentage of earnings losses these benefits replaced. As an example, the Wisconsin male uncontested

cases had mean benefits of $2,150, which were 85 percent of mean earnings losses. As the table indicates, the replacement rates varied considerably among the samples, ranging from 41 percent for the California other WCAB cases (cases that involved a hearing or a compromise and release agreement, but for which the rating bureau did not prepare a formal disability rating) to 724 percent for the Florida regular cases. The replacement rate for the California male informal cases can be considered even more extreme, since the sample had mean benefits of $2,032, even though the estimates show no mean earnings loss.

As divergent as these replacement rates are among the several male samples in the three states, the ability of the state programs to distribute benefits to those workers with actual wage losses is even less impressive when the samples are disaggregated to show the results for groups of workers who are similar in age and type and severity of injury and were provided benefits under similar administrative procedures. Tables produced for the National Science Foundation study indicate that even when groups of workers are compared, the Wisconsin, California, and Florida workers' compensation programs have serious equity problems. Workers with equal losses of earnings do not receive equal benefits — thus violating the test of horizontal equity — and workers with different losses do not receive benefits proportional to their losses — thus violating the test of vertical equity.[7]

The equity criterion is not the only test used in the National Science Foundation study to evaluate state workers' compensation programs. Another criterion is adequacy, which considers the average replacement rate for all workers in a state. A lenient test of adequacy requires that at least 50 percent of gross earnings losses be

7. The definition of equity used here implies that vertical equity requires a strict proportionality of benefits to losses. That is, a worker with twice the losses of another worker should receive exactly twice the benefits. More generally, vertical equity only requires that there be a consistent relationship between losses and benefits. Society may decide, for example, that benefits should increase less (or more) than proportionate to losses. The desired relationship between benefits and losses may be nonlinear, which is consistent with the use of minimum and maximum benefits. Evaluation of workers' compensation benefits becomes much more complicated when the test for vertical equity is something other than strict proportionality between losses and benefits. For an extended discussion of this point, see Burton and Vroman (1979), fns. 15 and 49.

replaced by benefits, and a more stringent test of adequacy requires that 66.66 percent be replaced. For the workers in the samples, the Wisconsin program replaced 75 percent of the earnings lost in the 1968–73 period, the Florida program 59 percent, and the California program 46 percent. For these three states as of 1968, workers' compensation benefits for permanent partial disability benefits were generally adequate.[8]

A third criterion used to evaluate the workers' compensation program is efficiency, which primarily considers the administrative costs of providing benefits under the workers' compensation delivery system, which includes employers, insurance carriers, workers, attorneys, and government agencies. Efficiency should not be defined as the cheapest possible delivery system, but as the least expensive system that can maintain a given level of adequacy and equity. Using that definition, the Wisconsin program appears to be preferable to both Florida and California. The benefits were more equitable than in the other two states, although still seriously inequitable; they were adequate; and litigation was much less prevalent in Wisconsin than in the other two states.

Possible Reforms of Benefit Programs

The approaches used as of 1968 in California, Florida, and Wisconsin to provide workers' compensation benefits for permanent partial disabilities appear to have serious problems. Although on average the benefits were adequate, the programs often failed to match the benefits to the workers with actual losses of earnings, thus causing serious inequities. Moreover, in Florida and California the delivery systems appeared to require an excessive amount of resources to achieve unimpressive adequacy and equity, thus demonstrating a lack of efficiency in those states.

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8. The comparison of the benefits to the earnings losses assumes the sole purpose of the benefits is to compensate for work disability. To the extent the benefits are meant to compensate for some of the other consequences of injury, such as impairment or nonwork disability, the replacement rates will be lower. This will affect the adequacy evaluations made in the text and, probably to a lesser extent, the equity evaluations. This issue is examined in Berkowitz, Burton, and Vroman (1979).

The causes of these deficiencies are multiple and are analyzed in more detail in the report prepared for the National Science Foundation project (Berkowitz, Burton, and Vroman 1979). Among them are the reliance in most jurisdictions on a passive state workers' compensation agency whose primary function is to resolve disputes after they arise rather than to concentrate on procedures that prevent disputes. Wisconsin provides an outstanding example of a jurisdiction with an active workers' compensation agency that has been able to reduce litigation without sacrificing other virtues of the program.

Even in Wisconsin, however, the data suggest that equity is a serious problem. An important part of the cause for this problem appears to be the reliance on operational standards for permanent partial disability benefits that use proxies for actual wage loss to make decisions about the amount of appropriate benefits on an *ex ante* basis. Essentially, the permanent partial benefits are paid on the basis of an educated guess about the economic consequences of a particular injury — and the data from the National Science Foundation study indicate that the process is more guess than educated.[9]

What can be done to improve the performance of the workers' compensation program in dealing with permanent partial disabilities? Three possible approaches deserve mention: an improved *ex ante* system, a pure wage loss system, and a hybrid system.

An Improved Ex Ante System. An improved *ex ante* system would continue to evaluate permanent partial disabilities after the medical condition is stable and before the wage loss for which the benefits are intended occurs, but the criteria for rating the disability would be

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9. The practice of using the impairment as a proxy for work disability has a long history of skeptical commentators. Addressing the Conference on Social Insurance in 1916, P. Tecumseh Sherman stated:

> Our American schedules are absolutely unprincipled. The amounts fixed for specific injuries have been determined not by estimating the resulting loss of earning power but by simple compromise between opposing political influences, thereby excluding any principle upon which to seek for finality or uniformity between the different States. Though the compensation fixed in such schedules for the minor injuries is sometimes fairly generous, that allowed for the major injuries generally is absurdly insufficient; whereas if either class of injuries is to be favored over the other, it certainly should be the major class. No allowance is made in such schedules for the variations in the loss resulting from the injured person's particular occupation, skill, age, etc. Such schedules also are all most insufficiently formulated (Sherman 1917).

improved. California provides a rough model for this improved *ex ante* system, because the rating system there does not use the anachronistic distinction between scheduled and unscheduled injuries found in most jurisdictions and there is a deliberate effort to incorporate some other influences into the calculation of benefits by the use of age and occupational adjustments. The main problems with the California schedule are that the standards for rating the medical condition are too loose and invite litigation; the ratings prepared by the rating bureau are virtually ignored by the parties and the administrative law judges when the cases become controverted; and the ratings produced by the system have not been validated against actual labor market experience. Although these deficiencies are serious, a state that wants to stay with a strictly *ex ante* approach to permanent partial benefits would nonetheless benefit from using California as a starting point.

The inherent faults of an *ex ante* system, however, can only be minimized, not overcome. One is the virtual impossibility of predicting as of the date of maximum medical improvement what will be the subsequent labor market experience of the disabled worker. Moreover, before the date when the size of the permanent disability award is determined, the worker has an incentive to exaggerate the apparent severity of the injury since that will increase the size of the award. The employer will try to downplay the severity of the injury, but the employer's incentive to reemploy the worker is muted because the actual labor market experience of the worker has only a limited influence on the size of the permanent disability award and consequently on the amount of the employer's costs.[10] Thus the incentives for rehabilitation and reemployment are restricted for both parties in an *ex ante* system.

There are some advantages to an *ex ante* system. The administrative burdens are reduced, since cases can be closed once a determination of the amount of permanent disability benefits is made. Moreover, once the case is closed, there is a strong incentive for the

10. The relationship between the size of the award and the amount of the employer's cost assumes the employer is self-insured or purchases insurance that is experience-rated. When an employer buys insurance that is not experience-rated, the firm has little incentive to find the worker a job if the earnings that result do not substantially affect the award the firm must pay.

employee to return to work since these earnings will not reduce the award. On net, I believe the disadvantages of the *ex ante* system dominate the advantages. But the record indicates that most states prefer this approach, and an improved *ex ante* system may be the best hope for reform in these jurisdictions.

A Pure Wage-Loss System. Another possible approach to reform is a "pure" wage-loss system, in which permanent disability benefits would be paid only if actual loss of earnings occurs. One variant was endorsed by the Interdepartmental Workers' Compensation Task Force in its 1977 report. Although benefits for nonwage losses based on the degree of impairment were supported as an optional addition, the basic permanent disability benefit was to be operationally based on the worker's actual loss of earnings. This *ex post* approach to permanent partial disability benefits is a possible solution to the problem of lack of equity since the purpose is to channel benefits to those who experience actual rather than presumed work disability.

But the pure wage-loss approach has its own problems. One is that, if the theoretical advantage of the *ex post* approach over the *ex ante* approach is to have any real meaning, cases will have to be kept open for long periods. The equity problem is not solved by denying benefits to a worker at the date of maximum medical improvement because he or she is experiencing no wage loss at the time and then denying benefits to the same worker experiencing wage loss three years later because the loss did not occur soon enough. A second problem, which has implications contrary to those of the first problem, is that determining the wage loss due to the injury is difficult, and the difficulty increases with time. On one hand, projecting the potential earnings for an individual worker (line *BC* in figure 2.1) is a formidable task. On the other hand, any shortfall of actual earnings below potential earnings in the period after the date of maximum medical improvement may be due not to the injury but to the myriad other factors that can adversely affect earnings, such as a plant shutdown that affects injured and uninjured workers alike. A third problem with a pure wage-loss approach is that if any amount of wage loss is compensated, no matter how small, the administrative burdens can be substantial.

A fourth problem with a pure wage-loss approach is that since the amount of benefits after the date of maximum medical improve-

ment is dependent on the extent of wage loss, there is less incentive for an employee to return to work (since that will reduce benefits) than in the *ex ante* approach in which the amount of permanent disability benefits does not decline if the worker has earnings. The possible work disincentive effect is aggravated if the benefits are tax-free and if a very high proportion of wage loss is replaced by benefits. A fifth and related problem is that many workers are still in a rehabilitation phase at the date of maximum medical improvement, and the disincentive effect of wage-loss benefits can be particularly acute for these workers (see Keefe 1981). A sixth problem is that if the only type of benefit payable after the date of maximum medical improvement is a wage-loss benefit, then some workers — those with no wage loss after the date of maximum medical improvement — will receive no permanent disability benefits, even if they have such serious permanent impairments as the amputation or total loss of use of an arm.

Although these problems suggest that a pure wage-loss approach is likely to find few adherents, there are some advantages to the approach. The potential for achieving equity is much greater in a wage-loss system than in an *ex ante* system. Moreover, while the incentive to return to employment after the date of maximum medical improvement is less for the worker in a wage-loss system than for the worker in an *ex ante* system, the employer's incentive to reemploy the worker is greater, since the payment of wages translates into lower benefit payments. On net, I believe that, compared to the *ex ante* approach, the disadvantages of the pure wage-loss system dominate the advantages, but the case is not compelling.[11]

A Hybrid System. A third approach to reform of permanent partial disability benefits would be a hybrid system, combining some of the best elements of the *ex ante* system with some of the virtues of the pure wage-loss approach. Operationally, such a hybrid system could begin

11. A wage-loss system can be adequate, inadequate, or excessively generous, depending on the design of the particular system. It is not evident whether the wage-loss approach or the *ex ante* approach involves more administrative costs. Under the wage-loss approach, hearings to determine the amounts of permanent disability benefits can be eliminated when the workers experience no actual losses of earnings. The wage-loss approach, however, requires cases to be kept open for extended periods, and benefits must be periodically recalculated if actual earnings fluctuate.

with a comprehensive set of standards for rating impairments and functional limitations. These standards should be issued by the state workers' compensation agency to replace any schedules included in the statute. The rating standards would emphasize objective factors (such as limited motion) rather than subjective factors (such as pain) in order to reduce the opportunities for controversion.[12] Use of these standards by a disability evaluation unit within the state agency should be obligatory before permanent partial disability benefits are paid or the case goes to a hearing, and the unit's rating must be accepted by the administrative law judges, agency appeals boards, and the courts unless the rating is clearly defective. The rating produced by the evaluation unit can be considered the standard rating.

The standard rating can be used as a component of several benefit systems that are described in the final report to the National Science Foundation (Berkowitz, Burton, and Vroman 1979, chap. 18). One system would contain two types of permanent disability benefits: presumed disability benefits (type I) and actual disability benefits (type II). Both would be paid in addition to any temporary disability benefits. The type I benefits could be based on the standard rating, or the standard rating modified by several objective factors that usually influence the extent of work disability, such as the worker's age and education, and that provide approximations of the influence of personal characteristics on a worker's post-injury labor market experience, given the seriousness of the injury. The factors could be incorporated by use of an objective formula, such as the one used in California, and their influence on the standard rating would not vary from case to case because of subjective assessments by an administrative law judge about their likely impact for particular workers.[13]

Once the modified rating (or standard rating, if the jurisdiction decides not to incorporate other factors into a formula) is determined, the amount and duration of the presumed disability (type I) benefits are calculated. The preferred approach would pay the type I benefits

12. The American Medical Association's *Guides to the Evaluation of Permanent Impairment* (1971) are a possible starting point for the development of state standards.

13. The formula incorporating the adjustment factors would be designed so that on average the standard ratings would translate into the same level of modified ratings. In other words, modification factors would be as likely to increase as to decrease the standard ratings.

for a fixed period for all cases, for example, six months, with the amount of the weekly benefit varying as a function on the size of the modified (or standard) rating.[14] Thus a 5 percent rating would produce six months of benefits, with the weekly benefit equal to 5 percent of the worker's pre-injury wage, subject to a maximum benefit of 100 percent of the state's average weekly wage. It may be desirable to have the fixed duration for the presumed disability benefits be longer than six months. Important principles are that these presumed disability benefits are paid without requiring the worker to demonstrate any actual loss of earnings and that the period of presumed disability benefits is long enough for most workers to recover their strength and earning capacity so that they are unlikely to be experiencing actual wage loss by the end of the period.

Under the hybrid system, a worker could also be eligible for type II benefits if actual wage loss continued after the type I benefits had expired. The worker's potential earnings (defined as the worker's pre-injury earnings and preferably increased through time to reflect changes in wages or prices) could be reduced by 20 percent, for example, to produce the worker's threshold earnings. If actual earnings are less than the threshold earnings, the difference is the earnings shortfall. Then the type II benefits could be calculated as 80 percent, for example, of the earnings shortfall.

In order to gain experience with the plan, particularly in terms of the potential costs, several limitations on eligibility for benefits seem appropriate, at least during the initial years. For example, eligibility for type II benefits must be initially established within two years after type I benefits expire. Also, the burden of proof to demonstrate that the earnings shortfall was due to the work-related injury or disease would be on the worker if the adjusted disability rating were between 11 and 40 percent, and on the employer to show the contrary if the rating were over 40 percent. The worker would not be eligible for type II benefits if the modified ratings were 10 percent or lower.

These rules and percentages for the type I and type II benefits are meant to be illustrative and would have to be modified for each

14. An alternative approach would make the duration of the benefits dependent on the size of the modified rating (for example, each percent of rating would result in four weeks of benefits), and the weekly benefit could be 66.66 percent of the worker's pre-injury wage, subject to the maximum benefit of 100 percent of the state's average weekly wage.

jurisdiction in light of prevailing economic, administrative, and legal standards.[15] There are, however, seven general guidelines for a hybrid system that seemed relevant for almost every jurisdiction.

1. There should be a lag between the date of maximum medical improvement and the initial date of eligibility for wage-loss benefits. The lag should be at least three months and preferably six months or more. This guideline is designed to deal with the disincentive problems for workers still in the rehabilitation process.

2. At the date of maximum medical improvement, all workers with a permanent impairment of any type should receive a scheduled award. The impairment should be evaluated by an objective standard, such as the *Guides to the Evaluation of Permanent Impairment* (American Medical Association 1971). The standard impairment rating may be modified by objective factors, such as age and education, but this should be done by a formula and not by a subjective evaluation of the facts in the individual case. The standard or modified rating should be used to determine benefits that are paid until the initial date of eligibility for wage-loss benefits. These presumed disability benefits can be viewed as incorporating payments for impairment and nonwork disability, as well as work disability. The payment of these scheduled benefits for all workers with a permanent impairment should rectify the inequity of some workers receiving no permanent disability benefits under a pure wage-loss approach.

3. Wage-loss benefits would be paid only to workers with at least a modest amount of lost earnings. A required amount of wage loss should be at least 15 percent and preferably 20 percent of potential earnings. This guideline is designed to simplify the determination and administration of benefits.

4. The wage-loss benefits should be a high percent of compensable wage loss, but not so high as to become a disincentive. The replacement rate should be 75 to 85 percent of any earnings losses in excess of the minimum required wage loss of 20 percent of potential earnings. A replacement rate in excess of this raises a serious work disincentive problem.

15. Additional specific factors that would have to be considered in formulating a hybrid system are discussed in Berkowitz, Burton, and Vroman (1979), chap. 18.

5. The earliest possible date of eligibility for wage-loss benefits is immediately after the scheduled benefits expire. The actual payment of wage-loss benefits must commence within a reasonable time period after the initial eligibility date in order to increase the probability that any earnings shortfall was caused by the work-related injury or disease. Possible cutoff dates for commencing wage-loss benefits would be two years after the date of maximum improvement for less serious injuries and three years after the date of maximum improvement for more serious injuries. These dates could then be extended as experience under the program accrues. The cutoff dates should alleviate the problems of cases being open for long periods and of determining the cause of the disability.

6. A worker who experiences continuing compensable wage loss should continue to receive benefits until normal retirement age. This should overcome the equity problems associated with the current *ex ante* approach to permanent disability benefits found in most state workers' compensation programs.

7. The potential earnings of a worker should be adjusted through time in order to reflect changes in the wages that the worker would have earned. These adjustments should be made by using a formula, such as adjusting each worker's wage in accordance with changes in the state's average weekly wage, rather than by making individual estimates on the basis of the worker's personal characteristics.[16] The latter procedure would be a source of considerable litigation. The purpose of adjusting the potential earnings is to provide more realistic estimates of the wage loss caused by the work-related injury or disease.

The intent of the hybrid system is to provide most cases only type I benefits, which, because of the emphasis on objective factors to produce a standard or modified rating, should reduce the amount of litigation in most states. This should help improve the efficiency of the program without adversely affecting adequacy or equity. The type II benefits would be used in those unusual cases where the type I bene-

16. A more complicated formula could adjust the worker's pre-injury wage by subsequent earnings developments in his industry or occupation, rather than using the state's average weekly wage. The crucial element is that the projections be done by a well-defined formula that does not permit litigation about potential earnings on a case-by-case basis.

fits were seriously deficient, thus improving the equity of the program. The hybrid system makes no pretense of providing complete equity in the sense of precisely matching benefits to wage loss, but this is in any case an illusory goal that would elude even a pure wage-loss system (which would also be a relatively inefficient system since the type of difficult decisions required in the type II benefits in the hybrid system would have to be made in all the cases in the pure wage-loss system). The hybrid system has as its virtue the provision of a safety valve for the worker who has unusually adverse experience.[17]

The Wage-Loss Concept in Florida

Among the most widely discussed recent developments in workers' compensation is the 1979 Florida legislation that incorporated the wage-loss concept into the permanent partial disability benefits there. The Florida legislation provides impairment benefits that are paid to workers with certain types of permanent impairments (amputations, loss of 80 percent or more of vision, or serious head or facial disfigurements) but are not paid to workers with other types of permanent impairments (such as total or partial loss of use of a body member). The impairment benefits were $50 for each percent of permanent impairment for 1 to 50 percent ratings, and $100 for each percent over 50 percent. Thus a worker with a 60 percent impairment rating would have received $3,500 under the 1979 law. These amounts were increased effective May 1, 1982, to $250 for each percent of permanent impairment for 1 to 10 percent ratings, and $500 for each percent over 10 percent. Thus a worker with a 60 percent impairment rating now receives $27,500. These impairment benefits can be paid in a lump sum as of the date of maximum medical improvement.

Workers with permanent impairments are also eligible for wage-loss benefits as of the date of maximum medical improvement if sufficient wage loss occurs. Wage-loss benefits are paid to workers

17. The hybrid system, while having only limited counterparts in actual practice, does have an intellectual history that provides some reassurance for those concerned about sharp breaks in tradition. Perhaps the most compelling precedent is the Report of the Permanent Partial Disabilities Committee of the IAIABC (Reid 1966). Although the particulars of the Reid committee report differ from the hybrid proposal in this section, its purposes and approaches are similar.

with at least a 15 percent loss of earnings. Benefits are 95 percent of the earnings losses in excess of the 15 percent threshold. The maximum wage-loss benefit is the lesser of 66.66 percent of the worker's pre-injury wage or 100 percent of the state's average weekly wage. There is, in effect, a 3 percent per year escalation in potential earnings used to calculate wage loss (this figure increased to 5 percent a year for injuries that occurred after July 1, 1980).

The maximum duration for the wage-loss benefits is 350 weeks (increased to 525 weeks for injuries that occurred after July 1, 1980) or age sixty-five (if the worker is eligible for social security benefits), whichever occurs first. Workers lose their eligibility for additional wage-loss benefits if they do not experience at least three consecutive months of compensable wage loss in each two-year period.

The 1979 Florida legislation thus establishes two types of benefits for workers with permanent consequences of their work-related injuries or diseases. Impairments benefits are paid to workers with the specified types of permanent impairments. Wage-loss benefits are paid to workers with wage losses that meet the statutory prerequisite. An individual worker may be eligible for impairment benefits, or wage loss benefits, or both types of benefits, or neither type of benefit — depending upon the exact nature of the permanent impairment and the timing and amount of the earnings losses.

The Disincentive Problem with the Florida Wage-Loss Benefits. One of the disincentive issues in workers' compensation concerns the relationship between the amount of benefits and the amount of lost earnings. The replacement rate can be defined as the amount of benefits divided by the amount of wage loss caused by the work-related injury or disease. If the replacement rate is too high, there is a disincentive for workers to return to work.

Table 2.2 analyzes the replacement rates for the wage-loss benefits under the 1979 Florida legislation. In 1979, the gross average weekly wage, that is, wages before deductions for taxes and other items, was $218.22 for Florida workers. The net average weekly wage, that is, gross wages minus deductions for federal income and social security taxes, was $193.51 for a married Florida worker with three dependents. The relationship between gross and net wages changes because of the progressive nature of the federal income tax.

TABLE 2.2
Wage Loss and Benefits with 15-95 Wage-Loss Benefits, Florida, 1979

	No injury	33.33% Gross Wage Loss	66.67% Gross Wage Loss	100% Gross Wage Loss
Gross wage[1]	$218.22	$145.48	$ 72.74	$ 0.00
Net wage[2]	193.51	139.27	71.92	0.00
Gross wage loss	...	72.74	145.48	218.22
Net wage loss	...	54.24	121.59	193.51
Compensable wage loss[3]	...	40.01	112.75	185.49
Benefit[4]	...	38.01	107.11	145.48[5]
Benefit as % of gross wage loss	...	52.3%	73.6%	66.6%
Benefit as % of net wage loss	...	70.1%	88.1%	75.2%

Notes: 1. Gross wage before injury is 100 percent of the average weekly wage earned in 1979 by all Florida employees covered by the Unemployment Insurance Act.

2. Net wage is spendable average weekly earnings using 1979 annual average formula for a married worker with three dependents found in Seifert 1981.

3. Compensable wage loss is gross wage loss minus 15 percent of gross wage before injury. This is the actual 1979 law in Florida.

4. Benefit is 95 percent of compensable wage loss. The maximum benefit is the lesser of 66.66 percent of the worker's pre-injury wage ($145.48 in this example) or 100 percent of the state's average weekly wage, which was defined as $195 for 1979 (effective August 1, 1979) in the Florida statute.

5. Benefit restricted to 66.66 percent of the worker's pre-injury wage.

For a worker who experiences a 33.33 percent loss of wages, the loss of gross wages is $72.74 and the loss of net wages is $54.24. Using the 15-95 benefit formula in the 1979 Florida legislation (see table 2.2, notes 3 and 4), the wage loss benefit received by the worker is $38.01, which represents 52.3 percent of the gross wage loss and 70.1 percent of the net wage loss. For a worker who loses 66.66 percent of pre-injury wages, the replacement rates are 73.6 percent of gross wage loss and 88.1 percent of net wage loss. Because of the maximum benefit amounts provided by the 1979 Florida legislation, the worker who has a total loss of income has replacement rates of 66.66 percent of gross wage loss and 75.2 percent of net wage loss.

The replacement rate data in table 2.2 do not appear too far out of line with the traditional notions that workers' compensation

TABLE 2.3
Marginal Replacement Rates with 15-95 Wage-Loss Benefits

	Move from 100% to 66.67% Gross Wage Loss	Move from 66.67% to 33.33% Gross Wage Loss	Move from 33.33% to 0% Gross Wage Loss
Change in benefits	$38.37	$69.10	$38.01
Change in gross wage	72.74	72.74	72.74
Change in net wage	71.92	67.35	54.24
Marginal replacement rate *G* (change in benefits ÷ change in gross wage)	52.7%	95.0%	52.3%
Marginal replacement rate *N* (change in benefits ÷ change in net wage)	53.4%	102.6%	70.1%

benefits should replace 66.66 percent of gross wage loss or 80 percent of spendable earnings loss. (National Commission 1972, pp. 56–57). The replacement rates for workers with a 66.66 percent loss of wages, however, provide a clue that problems may be lurking in the 15-95 wage-loss formula.

Another disincentive issue concerns the relationship between reductions in benefits that result from additional earnings. The marginal replacement rate can be defined as the change in benefits divided by the change in earnings that result from additional hours of work by an employee. If the marginal replacement rate is too high there is a disincentive for workers to return to work. To take an extreme example, if the marginal replacement rate is 100 percent and a $100 increase in earnings leads to a $100 reduction in benefits, only a devotee of the work ethic is likely to seek additional employment.

The disincentive issue associated with the marginal replacement rates included in the 1979 Florida legislation can be analyzed with the data in table 2.3. The table uses the information from table 2.2 for a Florida worker earning the state average weekly wage and in effect asks what happens to a worker who returns to work in stages. If the worker starts from a position of no earnings and goes back to work one-third time, his or her benefits will drop $38.37 (from $145.48 to $107.11), resulting in a marginal replacement rate for gross earnings of 52.7 percent and a marginal replacement rate for net earnings of

53.4 percent. If, as the next step, the worker increases work from one-third time to two-thirds time, benefits will drop $69.10 (from $107.11 to $38.01), resulting in a marginal replacement rate for gross earnings of 95.0 percent and a marginal replacement rate of 102.6 percent for net earnings. Finally, if the worker now expands the amount of work time from two-thirds to full time, the benefits will drop $38.01, resulting in a marginal replacement rate for gross earnings of 52.3 percent and a marginal replacement rate for net earnings of 70.1 percent.

There surely is a disincentive for the worker facing these choices. Several observations and qualifications are necessary, however. First, the marginal replacement rates depend on the extent to which the worker has already returned to work and the increment of full-time work he or she is contemplating. For example, a worker who has gone back to work one-third time and is considering a jump to full-time employment faces a marginal replacement rate that is the average of those shown in the second and third columns of table 2.3. Second, the marginal replacement rates depend on the level of the worker's pre-injury wage compared to the state's average weekly wage. For example, a worker earning twice the state's average weekly wage will have lower average and marginal replacement rates when sustaining total loss of wages because of the limit on wage-loss benefits to 100 percent of the state's average weekly wage. Third, the net wage loss and the replacement rates for net wage loss depend on each worker's tax status. The examples in tables 2.2 and 2.3 assume a worker with three dependents, and different numbers of dependents will change the net wage amounts. Fourth, the disincentive discussion implicitly assumes that workers have choices about the amount of work they can provide. To the extent employers, carriers, or the workers' compensation agency dictate the work schedule, the disincentive issue is irrelevant.

Even with these qualifications, the disincentive issue looms large in the Florida wage-loss benefits. Many workers with permanent impairments experience a long period of recovery while they are increasing their work hours from zero to full time; some workers with serious injuries never do return to work full-time. Vroman (1973) has provided some evidence demonstrating this recovery process among Florida workers with work-related injuries. For these workers, the high marginal replacement rates shown in table 2.3 are a deterrent to

recovery unless the unrealistic assumption is made that workers have no control over the amount of time they work.[18]

The magnitude of the disincentive problem in the 1979 Florida legislation is not inherent in the wage-loss approach. The original proposal for wage loss benefits in Florida used a 20-80 formula instead of the 15-95 formula ultimately adopted.[19] The 20-80 plan is analyzed in tables 2.4 and 2.5, which show the highest marginal replacement rate for net wage loss is 86.4 percent. Even this figure ought not induce euphoria on the disincentive issue, but in comparison to the 15-95 plan, the 20-80 plan seems much preferable in terms of marginal replacement rates.

A possible objection to the 20-80 plan is that the relatively high threshold (20 percent loss of earnings) causes the average replacement rate to be too low for workers with modest losses of earnings. The average Florida worker with 33.33 percent loss of wages receives only $23.28 of benefits under the 20-80 plan (table 2.4), compared with $38.01 under the 15-95 formula actually adopted in Florida (table 2.2).

The problem with inadequate *average* replacement rates can be solved without relying on excessive *marginal* replacement rates. The key to the solution is to lower the threshold figure used to define compensable wage loss. Tables 2.6 and 2.7 illustrate a 10-80 plan. The average replacement rate for a worker with a 33.33 percent loss of earnings is higher under the 10-80 plan than under the 15-95 plan (56.0 percent of gross wage loss in table 2.6 versus 52.3 percent in table 2.2). The marginal replacement rate in the 10-80 plan, however, never approaches the excessive rate in the 15-95 plan (80.0 percent of gross wages in table 2.7 versus 95.0 percent in table 2.3). The lesson is that the generosity of a wage-loss plan should be determined by varying the threshold figure used to define compensable wage loss, rather than by varying the figure used to determine benefits as a percentage of compensable wage loss.

18. Several other chapters in this volume provide evidence that higher benefits induce greater amounts of work disability. See, however, the New York results later in the present chapter.

19. The 20-80 formula (then known as the 80-80 formula) was proposed by Wayne Vroman and John Burton to the Florida Workers' Compensation Advisory Committee in January 1978.

TABLE 2.4
Wage Loss and Benefits with 20-80 Wage-Loss Benefits, Florida, 1979

	No injury	33.33% Gross Wage Loss	66.67% Gross Wage Loss	100% Gross Wage Loss
Gross wage[1]	$218.22	$145.48	$ 72.74	0.00
Net wage[2]	193.51	139.27	71.92	0.00
Gross wage loss		72.74	145.48	218.22
Net wage loss		54.24	121.59	193.51
Compensable wage loss[3]		29.10	101.84	174.58
Benefit[4]		23.28	81.47	139.66
Benefit as % of gross wage loss		32.0%	56.0%	64.0%
Benefit as % of net wage loss		42.9%	67.0%	72.2%

Notes: 1. Gross wage before injury = 100 percent of the average weekly wage earned in 1979 by all Florida employees covered by the Unemployment Insurance Act.

2. Net wage is spendable average weekly earnings using 1979 annual average formula for a married worker with three dependents found in Seifert 1981.

3. Compensable wage loss is gross wage loss minus 20 percent of gross wage before injury.

4. Benefit is 80 percent of compensable wage loss. The maximum benefit is 100 percent of the state's average weekly wage, which was defined as $195.00 for Florida in 1979.

TABLE 2.5
Marginal Replacement Rates with 20-80 Wage-Loss Benefits

	Move from 100% to 66.67% Gross Wage Loss	Move from 66.67% to 33.33% Gross Wage Loss	Move from 33.33% to 0% Gross Wage Loss
Change in benefits	$58.19	$58.19	$23.28
Change in gross wage	72.74	72.74	72.74
Change in net wage	71.92	67.35	54.24
Marginal replacement rate *G* (change in benefits ÷ change in gross wage)	80.0%	80.0%	32.6%
Marginal replacement rate *N* (change in benefits ÷ change in net wage)	80.9%	86.4%	42.9%

Evaluation of the Florida Wage-Loss Benefits. The 1979 Florida legislation can be evaluated in terms of the seven guidelines for a hybrid system provided earlier.[20] The record is mixed. The Florida legislation substantially meets the third guideline, which requires that wage-loss benefits be only paid to workers with at least modest lost earnings (the requisite in Florida that there be at least a 15 percent loss before any wage-loss benefits are paid is a minimal figure for the threshold guideline). Likewise, the Florida legislation meets the fifth guideline, pertaining to a reasonable period after the date of maximum medical improvement when wage loss must first be established in order to be eligible for the wage-loss benefits. The Florida law also partially complies with the seventh guideline, which requires the potential earnings of workers to be adjusted through time to reflect changes in wages. The annual escalation of 3 percent (or 5 percent) in the procedure used to calculate wage loss is rather low in light of the increases in prices and wages in recent years, but at least the Florida law provides a modest contribution to protecting workers against inflation.

The Florida legislation fails to meet four of the guidelines for a hybrid system. The first guideline, requiring a lag between the date of maximum medical improvement and the initial date of eligibility for wage-loss benefits, is clearly violated since workers are immediately eligible for benefits. Many workers will begin to receive benefits in the rehabilitation phase of their post-injury recovery period and are likely to face a serious disincentive. The disincentive problem is aggravated because 95 percent of earnings losses are replaced, a clear violation of the fourth guideline. This is especially troublesome since the benefits in Florida are tax-free. With a 95 percent replacement rate, some workers will actually be worse off by increasing the amount of time they work.

The Florida law also violates the sixth guideline, which suggests that workers who experience continuing wage loss should continue to receive benefits until their normal retirement age. At most,

20. The 1979 Florida legislation represents neither a pure wage-loss system nor a hybrid system as those systems have been defined. Nonetheless, I apply the seven general guidelines for a hybrid system to the Florida legislation because they provide criteria that can be used to evaluate any state's permanent partial disability benefits. States that use an *ex ante* system would be found seriously defective in terms of these seven guidelines.

TABLE 2.6
Wage Loss and Benefits with 10-80 Wage-Loss Benefits, Florida, 1979

	No injury	33.33% Gross Wage Loss	66.67% Gross Wage Loss	100% Gross Wage Loss
Gross wage[1]	$218.22	$145.48	$ 72.74	0.00
Net wage[2]	193.51	139.27	71.92	0.00
Gross wage loss		72.74	145.48	218.22
Net wage loss		54.24	121.59	193.51
Compensable wage loss[3]		50.92	123.66	196.40
Benefit[4]		40.74	98.93	157.12
Benefit as % of gross wage loss		56.0%	68.0%	72.0%
Benefit as % of net wage loss		75.1	81.4	81.2

Notes: 1. Gross wage before injury is 100 percent of the average weekly wage earned in 1979 by all Florida employees covered by the Unemployment Insurance Act.

2. Net wage is spendable average weekly earnings using 1979 annual average formula for a married worker with three dependents found in Seifert 1981.

3. Compensable wage loss is gross wage loss minus 10 percent of gross wage before injury.

4. Benefit is 80 percent of compensable wage loss. The maximum benefit is 100 percent of the state's average weekly wage, which was defined as $195.00 for Florida in 1979.

TABLE 2.7
Marginal Replacement Rates with 10-80 Wage-Loss Benefits

	Move from 100% to 66.67% Gross Wage Loss	Move from 66.67% to 33.33% Gross Wage Loss	Move from 33.33% to 0% Gross Wage Loss
Change in benefits	$58.19	$58.19	$40.74
Change in gross wage	72.74	72.74	72.74
Change in net wage	71.92	67.35	54.24
Marginal replacement rate *G* (change in benefits ÷ change in gross wage)	80.0%	80.0%	56.0%
Marginal replacement rate *N* (change in benefits ÷ change in net wage)	80.9	86.4	75.1

the Florida law will provide wage-loss benefits for slightly more than ten years. This is not a trivial period, however, compared to the maximum duration in many jurisdictions, and may be justified at least partially because of the newness of the Florida law.

The final violation of the guidelines offered in the previous section is that the Florida law does not provide some benefits to all workers with a permanent impairment, as required by the second guideline. Indeed, to take an extreme example, a worker who suffers a 100 percent loss of use of an arm and returns to the old job with no wage loss will receive no permanent disability benefits. It is hard to justify a system that will provide permanent impairment benefits to a worker who experiences the amputation of a fou.th finger, but no impairment benefits for a worker who experiences an injury that leaves him or her with an arm that is useless.

An overall evaluation of the 1979 Florida legislation dealing with permanent disabilities is obviously difficult and dependent on subjective values. Using the seven guidelines in the previous section, the law seems defective. On one hand, the impairment benefits are much too restrictive, particularly in terms of the number of workers who are eligible. On the other hand, the wage-loss benefits seems unduly generous because an extremely high proportion of wage loss will be replaced for workers who qualify for these benefits, thus virtually ensuring a disincentive problem. Further, the disincentive problem is aggravated by the fact that the benefits are available immediately after the date of maximum medical improvement, when many workers are in a critical phase of the rehabilitation process.

Programs providing for permanent partial disability benefits in workers' compensation are in a period of ferment that can be traced in large part to the 1979 adoption of the wage-loss approach in Florida. The Florida legislation was a product of political compromises and clearly has merits as well as deficiencies. The challenge for reform of permanent partial disability benefits in the next few years is whether the Florida approach can be transferred to other jurisdictions with some of the merits intact while the defects are deleted.

Permanent Partial Disability Benefits in New York

The New York workers' compensation law provides some additional guidance for improving delivery of permanent partial disability bene-

fits in general and wage-loss benefits in particular (Burton, Larson, and Moran 1980).

Scheduled Benefits. The scheduled permanent partial disability benefits in New York are a typical example of *ex ante* benefits and are representative of those found in most jurisdictions. A list of body members is included in the statute with corresponding durations of benefits.[21] For example, a worker who suffers physical loss or loss of use of an arm receives 312 weeks of benefits, a leg, 288 weeks, and so on, down to 15 weeks for loss of a fourth finger. For partial loss or loss of use, compensation is paid for a period of time proportionate to the degree of loss. The weekly benefits are 66.66 percent of the worker's pre-injury wage, subject to a maximum of $105 per week. A hearing to determine the duration of the permanent disability benefits is scheduled as soon as the permanent consequences of the injury can be rated and, with the exception of the major member benefits described below, the duration is not affected by the existence of actual wage loss.

Nonscheduled Benefits. The New York nonscheduled permanent partial disability benefits are 66.66 percent of the difference between the wages earned before the injury and the wages the worker is earning, or is able to earn, after the injury. The benefits are subject to a maximum of $105 a week and a minimum of $20 a week (or actual wages if less than the minimum). The nonscheduled benefits are paid for the full period of disability, which can mean lifetime benefits. The Workers' Compensation Board can modify the amount of the benefits upon a showing of change in the worker's condition or earning capacity.

Several aspects of these nonscheduled benefits in New York should be mentioned. A worker with a nonscheduled permanent impairment receives no benefits unless there is an actual loss of earnings. In 1977 (the latest year for which data are available), 8.5 percent of nonscheduled cases were closed with no permanent disability benefits paid because there was no current loss of earnings. These cases are eligible to be reopened for a period of eighteen years from the date of the original injury or eight years from the last payment of compensa-

21. The duration of the scheduled benefits is reduced (within limits) by the duration of temporary disability payments.

tion, whichever is later. Nonscheduled cases can be closed with lump-sum awards, but these are subject to stringent preconditions and, unlike the lump-sum procedure used in most states, the New York lump-sum cases can be reopened upon a showing of change in medical condition. In any event, the lump-sum awards represent a declining share of nonscheduled cases — down from 45 percent in 1970 to 26 percent in 1977. The clear majority (65 percent in 1977) of nonscheduled cases in New York are closed administratively with payments continuing because the worker has demonstrated continuing actual wage loss.

There are additional aspects of the nonscheduled benefits that complicate the categorization of the New York approach, and data on the administration of the approach are inadequate.[22] The essential point, however, is that the New York nonscheduled benefits are operationally based on actual loss of earnings and paid on an *ex post* basis.[23] Indeed, using the criteria for identifying a pure wage-loss approach, the New York nonscheduled benefits are probably the most pristine version of the approach found in the country. What makes the New York wage-loss approach purest among the semipure is that benefits can be paid as long as wage loss continues (other states limit duration), and compromise and release agreements or other devices to limit the potential duration of wage-loss benefits are uncommon in New York (Michigan makes extensive use of redemption settlements). The reason the New York wage-loss benefits are not so well known as those in the other jurisdictions is that the New York schedule encompasses a high proportion of all injuries with permanent consequences, leaving only a relatively few nonscheduled cases. In contrast, the scope of the Michigan and Pennsylvania schedules is quite limited, leaving most cases to be handled by the wage-loss approach, and the 1979 Florida statute makes wage-loss benefits potentially available to all workers with permanent disabilities (including those

22. There is inadequate information on reopened cases.

23. The nonscheduled benefits that nominally are due can be reduced if the Workers' Compensation Board determines that there is a smaller loss of earning capacity. This limitation, similar to a provision in the 1979 Florida legislation, is almost inevitable even in a pure wage-loss aproach. An employer retains the right to demonstrate that the worker's post-injury earnings are artificially depressed by the worker's voluntary restriction of labor supply.

workers who also receive scheduled or impairment benefits). Although the New York nonscheduled benefits are relatively unknown, the experience with the approach is enlightening, and will be reviewed in the next section.

Major Member Continuing Disability Benefits. Section 15(3)(v) of the New York workers' compensation law provides that in cases involving 50 percent or more loss or loss of use of an arm, leg, hand, or foot, benefits are paid for the duration of the scheduled benefits, and, if actual wage loss continues beyond the scheduled duration, additional benefits are paid. The weekly benefit during the scheduled period is 66.66 percent of the worker's pre-injury wage (subject to the $105 weekly maximum), and the weekly benefit after the scheduled period is 66.66 percent of the difference between the worker's pre-injury wage and the worker's actual earnings after the scheduled benefits have expired (again subject to the $105 weekly maximum). The provision thus shifts benefits from an *ex ante*, proxy approach to an *ex post*, actual wage-loss approach and serves as a prototype of the hybrid system described earlier. Obviously, the version of the hybrid system encompassed in Section 15(3)(v) varies in a number of particulars from the hybrid system proposed here, but the essential attribute of the approach — starting with presumed disability benefits and then shifting to actual wage-loss benefits — is present.

Developments in Permanent Partial Disability Cases in New York

New York makes use of an *ex ante* approach, a wage-loss (or *ex post*) approach, and a hybrid system, making the Empire State sui generis.

In New York, the relative importance of scheduled and nonscheduled disabilities can be shown by statistics derived from the annual reports on closed compensated cases, but unfortunately the data on the major member continuing disability benefits (the hybrid approach) are too sparse to allow an historical review. The proportion of all compensated cases closed with an award for either scheduled or nonscheduled permanent partial disability increased from 9.7 percent in 1916 to 36.9 percent in 1955 to 41.4 percent in 1965. Since then the percentage has fluctuated in the 39 to 41 percent range, with scheduled awards accounting for 35 to 39 percent and nonscheduled

awards representing 2 to 4 percent of all cases (Burton, Larson, and Moran 1980, tables 9.2 and 9.4).

While the proportion of all cases accounted for by permanent partial disability cases has not varied much in recent decades, the costs of these benefits have shown considerable movement. From 1970 to 1979, for example, the percentage of all compensation costs accounted for by scheduled awards declined from 35.7 to 23.9 percent, while the nonscheduled awards increased their share from 34.5 percent to 54.6 percent of all compensation costs. The nonscheduled cost developments are particularly striking: in 1979 the nonscheduled awards represented 3.9 percent of the cases and over half of the dollars (Burton, Larson, and Moran 1980, tables 9.2 and 9.4).

I developed a model to explain the variations through time in the number, the average cost, and the total cost of the New York cases closed each year that paid permanent partial disability scheduled or nonscheduled benefits. The model is adapted from the approach used by Butler and Worrall (1982).[24]

The dependent variables measuring number of cases closed are the counts as published by the New York Workers' Compensation Board, divided by the number (in thousands) of New York employees.[25] The dependent variables involving costs are average cost per case and total cost per thousand employees, both in constant dollars (1967 = 100).

The Butler-Worrall model used simultaneous equations to explain wages, hours, and injury rates. I use simultaneous equations involving wages, hours, and (in turn) number of cases, average cost, and total cost. Butler and Worrall analyzed three types of cases — temporary total, permanent partial major, and permanent partial minor — and constructed expected benefits for each type. I analyze two types of cases — scheduled permanent partial and nonscheduled permanent partial. For institutional reasons, however, the New York expected benefits are identical for both types of permanent partial

24. The adaptations made for this study are discussed in an appendix, which is available from the author.

25. Butler and Worrall (1982, p. 4) use the number of claims filed per thousand employees as their measure of the injury rate. The New York data used in this study measure the number of cases closed per year, which has been divided by the number (in thousands) of New York employees. Because of the lag between date of filing and date of closing, all regressions in this study lag the independent variables by two years.

TABLE 2.8
Number and Cost of Permanent Partial Disability Cases: Expected Signs on Selected Independent Variables

Independent Variables	Number of Cases		Average Cost		Total Cost	
	Scheduled	Nonscheduled	Scheduled	Nonscheduled	Scheduled	Nonscheduled
Temporary total benefit	+	+	+	+	+	+
Permanent partial benefit	+	+	+	+	+	+
Unemployment rate	+	+ +	+	+ +	+	+ +

Notes: Number of cases, average cost, and total cost are dependent variables.
+ expected sign is positive
+ + absolute size should be larger than the absolute size of +

cases. The Butler-Worrall data are annual observations for the period 1972–78 for thirty-five jurisdictions. I use New York annual data for the period 1959–79, the only years for which comparable New York data are available. As a result, some of their variables are not used because data are unavailable or the variables were inappropriate. Finally, Butler and Worrall do not use the unemployment rate for their injury rate equations. I use the unemployment rate as an explanatory variable for the number of cases closed, the average cost, and the total cost equations.

The independent variables of particular interest are the temporary total benefit, the permanent partial benefit, and the unemployment rate. The expected signs for these variables are shown in table 2.8. The expected coefficients of the benefit variables are related to an institutional feature of workers' compensation. Almost all cases involving cash benefits begin with temporary total benefits. Some of these cases subsequently receive permanent partial benefits. If this occurs, the case is classified as a permanent partial disability case (even though the case began as a temporary total case), and the data show all the benefits in the case as payments for permanent partial disability. Given this institutional feature, Butler and Worrall argue that "the size of the temporary total payments should have a positive

effect on the number of permanent partial injuries filed" since the temporary total benefits bring some new cases into the program, and some of these cases end up with permanent partial awards (1982, p. 18). Moreover, Butler and Worrall assert that the major and minor permanent partial disability benefits are interrelated: increases in major benefits increase major claims and increases in minor benefits increase minor claims. In general, their empirical work supports these hypothesized relationships.

Consistent with the Butler and Worrall analysis, table 2.8 shows an expected positive coefficient on temporary total benefits for the numbers of the two types of permanent partial disability cases. I have only one benefit variable for both types of permanent partial cases and so cannot show how shifts in the relative benefits lead to changes in the proportion of scheduled and nonscheduled cases. An increase in permanent partial benefits, however, should increase the numbers of both types of permanent partial cases.

The unemployment rate is also included as a variable in the equations for number of cases closed. Since the extent of work disability for a given worker depends not only on the extent of functional limitations but on such other influences as labor market conditions, the number of cases closed in a year should be positively associated with the unemployment rate. But since scheduled permanent partial disability benefits are paid regardless of wage loss, while nonscheduled permanent partial benefits are only paid if the worker experiences an actual loss of earnings, the coefficient on the unemployment rate is expected to be larger in the regression for nonscheduled benefits than in the regression for scheduled benefits.

The regression results for the number of cases are presented in table 2.9. The coefficients on temporary total benefits are insignificant in both regressions, while the coefficient is significant for permanent partial benefits only in the regression for nonscheduled permanent partial cases. The sign, however, is negative, contrary to expectations. The coefficient for the unemployment rate is insignificant in the regression for scheduled permanent partial cases and is significant with the expected positive sign in the regression for nonscheduled permanent partial cases. The table indicates that a 1 percent increase in the unemployment rate is associated with a 0.323

TABLE 2.9
Number and Cost of
Permanent Partial Disability Cases,
New York, 1959–79

Independent Variables	Number of Cases		Average Cost		Total Cost	
	Scheduled	Nonscheduled	Scheduled	Nonscheduled	Scheduled	Nonscheduled
Temporary total benefit	−.520	[illegible]	.560	.514	−.372	1.27
	(.618)	(.549)	(1.13)	(.956)	(.511)	(1.13)
Permanent partial benefit	.368	−1.68	.454	−.263	.836	−1.95
	(.952)	(5.07)***	(1.69)	(.905)	(2.50)**	(3.79)***
Unemployment rate	−.073	.323	−.044	.167	−.204	.567
	(.513)	(2.65)**	(.587)	(2.07)*	(1.65)	(2.98)***
R^2	.315	.833	.582	.946	.690	.914
F	1.07	11.7***	4.17**	53.0***	5.18***	24.9***
Durbin-Watson	1.44	2.39	.984	1.45	2.07	1.85

Notes: Number of cases, average cost, and total cost are dependent variables.

All variables shown in logs; the benefit variables are dollars in real values.

These variables were included with other independent variables in two-stage least squares regressions that are reported in full in the appendix, where the variables are defined, values for the dependent variables given, and sources provided. The appendix is available from the author.

Statistical tests: *t*-ratios in parentheses.

Significance levels: *(0.10) **(0.05) ***(0.01)

percent increase in the number of nonscheduled permanent partial cases.[26]

The Butler and Worrall model did not consider determinants of the average cost per case and the total cost per thousand employees, but the model can be expanded to include these dependent variables. Higher temporary total benefits can be expected to increase the average costs and the total costs of both types of permanent partial cases, as shown in table 2.8.[27] Higher permanent partial benefits should also increase the average and total costs of the scheduled and nonscheduled cases. The unemployment rate should be positively associated

26. The variables are entered in log form, so coefficients can be interpreted as elasticities.

27. Total cost per thousand employees is the product of the number of cases per thousand employees and the average cost per case; since the numbers and averages are expected to be positive, the totals should also be positive. Similar reasoning explains the other expected signs in table 2.8.

with average costs and total costs for both types of cases.[28] Again, the coefficients on the unemployment rate are expected to be larger in the regressions for the nonscheduled benefits than in the regression for scheduled benefits.

The regression results for the average costs of closed cases are included in table 2.9. In the regressions for scheduled permanent partial benefits, both benefit coefficients have the expected positive sign, but neither is significant. For nonscheduled cases, the signs on the benefit coefficients are mixed and insignificant. The only significant coefficient for the unemployment rate in the average cost regressions is for the nonscheduled cases; a 1 percent increase in the unemployment rate is associated with a 0.167 percent increase in average cost.

For the total costs of closed cases, two of the coefficients for benefits are insignificant; the two significant coefficients suggest that higher permanent partial disability benefits increase the total cost of scheduled cases and decrease the cost of nonscheduled cases. The only significant coefficient on the unemployment rate indicates that higher unemployment is associated with a higher total cost for nonscheduled permanent partial cases.

The results in table 2.9 taken as a whole do not provide much support for the aspects of the model summarized in table 2.8. The significant coefficients on benefits have the wrong sign in two of three instances and are insignificant nine times. The unemployment rate coefficients are insignificant three times, although all three significant coefficients have the expected sign. Probably the most compelling results involve the statistically significant relationships between the unemployment rate and nonscheduled permanent partial cases: a deteriorating labor market is associated with more nonscheduled cases and with higher average and total costs for these cases.

To illustrate the possible importance of the relationship between labor market conditions and nonscheduled permanent partial benefits, consider these developments between 1970 and 1979. The variables in table 2.9 were entered in log form, so the coefficients

28. The higher unemployment rate should increase the duration of temporary total disability benefits in both types of permanent partial cases and also the duration of nonscheduled permanent partial disability benefits, which are paid only when actual wage loss occurs.

indicate the percentage increase in the dependent variable associated with a 1 percent increase in the unemployment rate. Over this period, nonscheduled cases were up 54.6 percent (from 0.560 per thousand employees to 0.866 per thousand), while the unemployment rate (lagged two years) was up 96.0 percent (from 2.5 to 4.9). Given the elasticity on the unemployment rate of 0.323, the increase in the unemployment rate would have produced a 31.0 percent increase in the number of nonscheduled cases. Likewise, the increase in the unemployment rate between 1970 and 1979 would have produced a 16.0 percent increase in the average (real) cost of nonscheduled cases, compared to the actual increase of 23.5 percent. Further, the unemployment rate increase would have increased total (real) costs per thousand employees by 54.4 percent, compared to the actual increase of 91.0 percent. Thus, over half the increases during the 1970s in all three measures of nonscheduled permanent partial benefits is associated with increases in the unemployment rate.

The results of applying the model to New York data must be viewed with caution, given the less than total consistency between predicted signs in table 2.8 and empirical results in table 2.9. But at the minimum, the statistical results suggest that scheduled and nonscheduled permanent partial benefits in New York are influenced by different factors, and that the number and cost of nonscheduled benefits are much more sensitive to labor market conditions. The differential results for scheduled and nonscheduled permanent partial benefits are consistent with expectations.

Conclusions

Several aspects of the preceding analysis merit emphasis. The dominant approach to compensating permanent partial disabilities relies on proxies for wage loss that are assessed before the period when the actual wage loss occurs. The data suggest that the *ex ante,* proxy approach does a poor job of matching benefits to actual wage loss and results in a serious equity problem. The results also suggest that the *ex ante* approach can provide benefits that on average are adequate, or inadequate, or more than adequate, and that the approach can be efficient or inefficient. In short, there is nothing inherent in the *ex ante,*

proxy approach that precludes success on the adequacy and efficiency criteria, but I believe the approach can not achieve equity.

The wage-loss approach has received considerable attention in recent years because of the incorporation of a variant of the approach in the 1979 Florida legislation. The primary force behind the legislation probably was the conviction of Florida employers that before 1979 the law was unduly expensive because, as administered, the permanent partial benefits were too generous. The particular version of wage-loss benefits that Florida adopted apparently will reduce the employers' costs of workers' compensation, although additional time is necessary to confirm that tentative conclusion. But the lesson from New York's experience with wage-loss benefits is that the approach also can be expensive. Moreover, the New York data suggest that the cost of wage-loss benefits is more sensitive to labor market conditions than the cost of benefits paid on an *ex ante* basis. All of this suggests that wage-loss benefits are not inherently more or less expensive, or adequate, than the *ex ante* benefits they are likely to replace. The relative costs depend on the generosity of the *ex ante* benefits being replaced, the particular variant of wage-loss benefits adopted, and the condition of the labor market.

The added sensitivity of the cost of wage-loss benefits to labor market conditions is not necessarily a fault. Indeed, the results from New York suggest that the nonscheduled (wage-loss) benefits are more equitable than the scheduled benefits. There is no particular reason to expect that the actual adverse labor market experience of workers with nonscheduled benefits is more sensitive to higher unemployment rates than the experience of workers with scheduled benefits. It is rather that benefits in nonscheduled cases have more flexibility in terms of reflecting lost wages, which should result in more equity.

Although the wage-loss approach should improve the equity of benefits, it has its own faults, including disincentives for workers to return to work at a critical phase of the rehabilitation process and the absence of payments to workers with serious impairments but no wage loss. To overcome some of the problems inherent in the wage-loss approach and in the *ex ante* approach, I favor a hybrid approach that in effect combines in sequence the *ex ante* and wage-loss approaches.

When the seven guidelines offered for a hybrid system were used to evaluate the 1979 Florida wage-loss benefits, a number of deficiencies were noted. The wage-loss approach found in New York's nonscheduled permanent partial disability benefits would also fail to meet most of the seven guidelines, although the particulars of the Florida and New York score cards would differ.

The criticism of the wage-loss approaches in Florida and New York should not be misinterpreted. It is not a defense of the *ex ante* system that existed in Florida before 1979 and that exists in most states now. Rather, the criticism should be understood as a denouncement of both the *ex ante* and wage-loss approaches and as a paean to the hybrid approach. Of course, like the other two approaches, there can be considerable variations in design and administration of the hybrid approach. The New York variant of the hybrid approach — the major member continuing disability benefits — has deficiencies, such as too restrictive eligibility rules and underutilization that can be traced to poor administration. The deficiencies and possible remedies have been detailed elsewhere (Burton, Larson, and Moran 1980). The essential point is that a working example of a hybrid approach exists and can serve as a starting point for other states and allay concerns that the idea is an ivory-tower while-away.

APPENDIX B

The Growth in Life Pensions Ontario Workers' Compensation 1976-1985

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The Growth in Life Pensions in Ontario 1976-1985

This is a paper on the sources of the increase in expenditures for Workers' Compensation life pensions in Ontario between 1976 and 1985. We use descriptive data to evaluate the contribution of changes in the number and duration of pensions and changes in pension benefits to the rise in expenditures. The results are but guides for a more rigorous investigation because our data are incomplete and not always consistent, and our inferences are drawn from descriptive statistics.

Data from 1976 through 1985 are used to represent the Workers' Compensation system as it is currently organized. This period includes the 1982-1983 recession during which lost time injury claims (LTIs)* were below the average for the ten-year period. The effect of the recession on the trend of lost time injuries is partially offset by the inclusion of 1984 and 1985, years of economic recovery.

The first section of this paper compares annual variations in the number of newly awarded pensions with variations in the number of lost-time injuries, duration between injury and award, and changes in the proportion of lost-time claims that are awarded life pensions. The second section describes changes in the characteristics of new pensioners from 1976 to 1985. The secular increase in the value of life pensions is described in the third section. The increases are decomposed into changes due to inflation and increases in the average real value of a pension. A summary and some conclusions are presented in the final part of the paper.

Life Pensions: New Awards, 1976-1985

Between 1976 and 1985, the value of new Schedule 1 awards for permanent disability increased from $81.3 million to $296.7 million.[1]

Expenditures can increase because the number of pensioners increases, because benefits per pension increase or a combination of both influences. We rank the contributions of these influences to increases in the number and value of pensions. The information should help policymakers to control growth in pensions without reducing the adequacy or equity of Workers' Compensation benefits.

Increases in the number of pensioners can be caused by:

1. Increases in the number of accidents causing an increase in lost time claims;
2. A reduction in the time between injury and the date on which a pension is awarded;
3. Increases in the proportion of lost time claims that are granted permanent pensions (the "award rate").

Lost Time Claims

If hazards are constant, the number of lost time injury claims (LTIs) should vary with the number of persons employed and the number of hours that they work. As shown in Figure 1 lost time injury claims roughly parallel the business cycle, a pattern which conforms to our expectation.[2]

The effect of annual changes in the number of LTI claims on awards of life pensions is distributed over several years because the Workers' Compensation Board needs time to evaluate the permanent effects of injury. The median time between injury and award was three years except in 1977-1978, 1983 and 1985, when it was two years. The medians are useful approximations but come from distributions with long right hand tails. From 1977 through 1985, 2.3 percent of awards were made in the year of injury, 16.9 percent were made in the year (t+1)

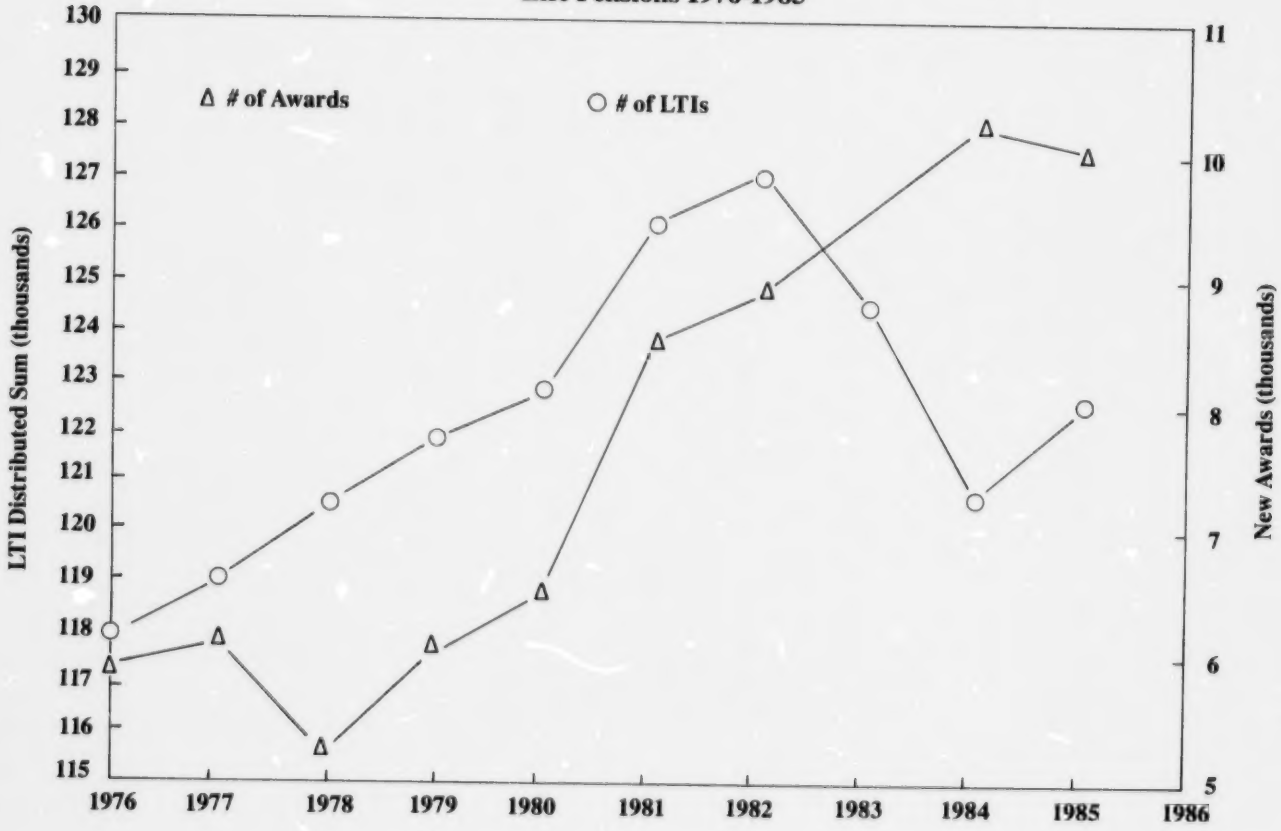
* The term lost time injury, or LTI, is used loosely throughout the paper to mean any claim for which some form of compensation is paid to a worker or survivor. In other words, it includes all injuries except those which result in only health care benefits being paid.

[1] Figures are the nominal present value of new awards, not inflation protected, assuming a 7 percent discount rate.

[2] The frequency of accidents, as well as the number of workers exposed to accidental injuries, often declines during periods of low employment.

Figure 1

**Lost-time Injury Claims (Distributed)
Compared to New Awards of
Life Pensions 1976-1985**



after injury, and 31.0 percent in the second year (t+2) after injury.[3] Eighteen and three-tenths percent of awards were made in the third year after injury. Thus, only slightly more than one-half (50.2 percent) of pension awards in a representative year are for injuries that occurred in the three years before the year of award (that is, at the end of the three-year period that includes the year of injury). A change in LTI claims in one year affects awards for an additional four to six years.

We represent the influence of changes in LTIs on awards by distributing LTIs across time, using the average intervals from the years 1977 through 1985 (Table 1). In 1976, for example, there were 134,790 LTIs. Our estimates of LTIs for the purpose of calculating award rates in 1976 is 117,970, representing the time distribution of LTIs from 1967 through 1976. The total (117,970) equals 2.3 percent of 1976 LTIs + 16.9 percent of 1975 LTIs + 31.0 percent of 1974 LTIs and so forth.

The intervals for the remaining awards include extreme values of as much as 36 years. The extremes represent second and third awards for one injury and errors in coding dates of awards or injuries. Second and third awards may also be present for cases with shorter intervals, based on our interpretation of the relationship between LTIs and awards.

The average interval between date of award and accident is longer for second or third awards than for first-time awards. We believe that approximately three-fourths of awards in t+4 (Table 1) and all awards with longer durations are second or third claims. The bias is not likely to affect our results if the awards are made in less than four years after the date of injury, since they can be assumed to be first-time awards.

In August 1980 the Board conducted a survey of injured workers who were being assessed for a permanent disability rating. Information was obtained for 1,180 workers. If the 1980 survey is representative, approximately 22 percent of the pensions reported as new awards are second or third awards.

If the incidence of multiple claims per injury has changed over time, our conclusions concerning the growth in new awards are biased. If, for example, the number of awards per injury increased over the ten-year period, observed award rates would increase without an increase in LTIs. Our data do not distinguish between increases in award rates caused by changes in first-time claims and increases caused by an increased number of multiple claims per injury.

We tested the possibility of an increased incidence of multiple claims by comparing the number of active pensions at the end of each year 1976-1985 with the number of newly awarded pensions in each year. The number of active pensions at the end of a year should equal the previous year-end number of pensions plus new awards and minus pension terminations occurring during the interval. A "new award" which is actually a second or third claim does not, however, increase the number of active pensions since a pensioner is only counted once in those data. An increase in the incidence of multiple claims must, all else equal, increase the difference between new awards and active pensions. A comparison of the differences (active pensions − new awards) for the years 1976 to 1985 reveals no significant changes over time.[4]

The distributed LTIs increase from 117,970 (1976) to 127,200 (1982) and decline to 120,730 in 1984 and increase to 122,630 in 1985 (Table 1). As with the absolute, contemporaneous values, the distributed data show that variations in LTIs account for a small part of the increase in awards from 1976 through 1985 (Figure 1).

Time between Injury and Award

Another possible source of increases in awards is a reduction in the interval between the accident and the award date. If the time needed to evaluate eligibility for pensions is reduced, observed award rates would increase for a time as backlogs of cases were reduced. As backlogs are reduced, observed award rates would decline, then be more or less constant. If the time period under study is sufficiently long, the effect of shortening the time between injury and award would appear as a temporary deviation from the long term trend. If the effects of shorter intervals are not completed in the time period under study, observed award rates for the last few years would be artificially high.

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[3] The percentages are the arithmetic means for 1977 through 1984.

[4] Our "test statistic" is: (Active Pensions − New Awards)/Active Pensions. The "all else equal" assumption implies that termination rates did not change significantly. David Caughlin, Actuarial Specialist, Workers' Compensation Board, prepared the results described in this section.

Table 1

Duration Between Accident and Time of Award

t	Lost Time Claims (thousands)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Time Lost Claims Distributed									LTI Distributed Sum	New Awards t	Percent Award Rate t
		t	t+1	t+2	t+3	t+4	t+5	t+6	t+7	t+8			
1967	97.49	2.19											
1968	98.05	2.21	16.50										
1969	115.60	2.60	16.59	30.17									
1970	111.46	2.51	19.56	30.36	17.81								
1971	105.71	2.38	18.86	35.79	17.91	9.70							
1972	118.34	2.66	17.89	34.51	21.12	9.76	5.66						
1973	128.92	2.90	20.02	32.73	20.36	11.50	5.70	3.46					
1974	139.61	3.14	21.81	36.64	19.31	11.09	6.72	3.48	2.07				
1975	125.68	2.83	23.62	39.91	21.62	10.52	6.48	4.10	2.08	2.56	113.72	3.96	3.47
1976	134.79	3.03	21.27	43.22	23.55	11.77	6.14	3.96	2.45	2.58	117.97	5.95*	5.01
1977	131.34	2.96	22.81	38.91	25.51	12.83	6.88	3.75	2.36	3.04	119.05	6.14	5.13
1978	129.66	2.92	22.22	41.73	22.96	13.89	7.49	4.20	2.24	2.93	120.58	5.27	4.35
1979	142.22	3.20	21.94	41.66	24.63	12.51	8.11	4.58	2.51	2.78	121.92	6.05	4.98
1980	139.85	3.15	24.06	40.14	24.00	13.41	7.30	4.96	2.73	3.11	122.86	6.05	4.90
1981	139.20	3.12	23.66	44.03	23.69	13.07	7.83	4.46	2.96	3.39	126.21	6.54	5.15
1982	122.29	2.75	23.52	43.30	25.98	12.90	7.63	4.79	2.66	3.67	127.20	8.54	6.68
1983	124.48	2.80	20.69	43.04	25.55	14.15	7.53	4.66	2.86	3.31	124.59	8.94	7.13
1984	147.30	3.31	21.06	37.86	25.40	13.92	8.26	4.60	2.78	3.54	120.73	10.23	8.47
1985	161.72	3.64	24.90	38.54	22.34	13.83	8.13	5.05	2.75	3.45	122.63	10.06	8.20
1986			27.35	45.57	22.74	12.17	8.08	4.96	3.02	3.41			
1987				50.05	26.89	12.39	7.11	4.94	2.96	3.74			
1988					29.54	14.65	7.23	4.34	2.95	3.68			
1989						16.09	8.55	4.42	2.59	3.66			
1990							9.39	5.23	2.64	3.22			
1991								5.74	3.12	3.27			
1992									3.43	3.87			
1992										4.25			

* from old data.

SOURCE: Lost Time Claims, New Awards: Administrative records, Ontario Workers' Compensation Board; columns (1) – (10), (12) calculated.

The median interval between injury and award for men was two years in the period 1977-1978. It increased to three years (1979-1982) and dropped to two years (1983-1985). The median interval for women was three years throughout the ten-year period. These results show that changes in the time needed to evaluate claims were not an important influence on the number of pensions awarded between 1976 and 1985. In the next section, we consider the contribution of changes in award rates to the increase in awards.

The Award Rate

Table 2 and Figure 2 show that award rates were nearly constant from 1976 through 1980. The rates increased sharply after 1980, reaching 8.47 percent in 1984 and declining slightly (to 8.20) in 1985. The increased rates contributed significantly to the growth in the number of pensions. Had the award rate equaled the ten-year median of 5.14 percent, awards would have equaled 63,220 instead of 73,770. In other words, 14.3 percent (10,550 of 73,770 pensions) of the new awards in the last ten years are due solely to increases in the award rate. It is also important to recognize that the 10,550 awards result from increases in award rates in the last five of the ten years 1976-1985. If award rates continue to increase the growth in pensions over the next ten years will be much larger impact than our results for 1976-1985 suggest. If, for example, award rates in the years 1976-1985 equaled the 1985 rate approximately 26,600 more pensions would have been awarded during the period (Figure 3).

Award rates can change because of changes in the characteristics of lost time injuries, because eligibility criteria for pensions are amended or interpreted differently by those who administer the Workers' Compensation law. The influence of changes in the characteristics of pensioners is considered in the next section.

Characteristics of Pensioners. Data on the age, severity of injury and sex of persons receiving new pension awards are available for 1977 through 1985. Prior research on the relationship between impairment and work disability shows that for a given severity of impairment, older men are more likely to be work disabled than younger men and that minority group members are more likely to be disabled than white males. If these relationships apply to Ontario workers, increases in the average age, severity of impairment or in the proportion of LTI claimants who are women would increase award rates.

Because the data describe pensioners rather than persons who suffered lost time injuries, we don't know whether changes in average age, severity of disability or sex distribution among pensioners reflect changes in the characteristics of injured workers or changes in the determination of eligibility for pensions. The problem is complicated by the fact that severity ratings change with changes in the evaluation procedures.

The data in Table 3 show that the proportion of new awards to women increased from 10.8 percent in 1977 to 17.6 percent in 1985. The absolute effect on award rates for 1976-1985 is small because the proportion of awards to women is small.

The median age of men and women pensioners varies between 48 and 49 from 1976 through 1981, declines to 46-47 for women after 1981 and declines to 47-48 for men in 1984-1985 (Table 3). The changes in age are too small to suggest that they influence the number of awards.

The severity of impairment among new awards to men is relatively constant between 1977 and 1985. Average severity among women doesn't show a clear trend but reached a ten-year low in 1985. The data show that the observed increase in award rates cannot be attributed to increases in the severity of disability.

The results to this point suggest that the increase in award rates cannot be attributed to changes in the characteristics of injured workers. We now consider the influence of changes in the Workers' Compensation Act and changes in the administration of the Act.

Changes in Policy/Administration. This section summarizes important changes in the Act and policies of the Board from 1976-1985.[5]

[5] Actuarial Services, January 27, 1986, RD 63/02300. This section was prepared by Doug Cain, Director, Claims Review Branch, Workers' Compensation Board, Ontario.

Table 2

Awards and Award Rates: 1976-1985

Year	(1) LTI (thousands)	(2) New Awards Life (thousands)	(3) Award Rate (2)/(1)	(4) New Awards If Rate '84 (thousands)	(5) New Awards If Median Award Rate (thousands)	(6) Difference Due to Change in Rates (2)-(5)	(7) LTI Deviations (thousands)	(8) LTI Deviation *Median Award Rate (thousands)	(9) Award Rate-Median Award Rate	(10) Rate Deviation * Median LTI
1976	117.97	5.95	.0504	9.67	6.06	-0.11	-4.48	-0.23	-.001	- .122
1977	119.05	6.14	.0516	9.76	6.12	-0.02	-3.40	-0.17	+.002	+ .245
1978	120.58	5.27	.0437	9.89	6.20	-0.93	-1.87	-0.10	-.008	- .979
1979	121.92	6.05	.0496	10.00	6.27	-0.22	-0.53	-0.03	-.002	- .245
1980	122.86	6.05	.0492	10.07	6.32	-0.27	+0.41	+0.02	-.002	- .245
1981	126.21	6.54	.0518	10.35	6.49	+0.05	+3.76	+0.19	-.000	0.000
1982	127.20	8.54	.0671	10.43	6.54	+2.00	+4.75	+0.24	+.016	+1.959
1983	124.59	8.94	.0718	10.22	6.40	+2.54	+2.14	+0.11	+.020	+2.449
1984	120.73	10.23	.0847	9.90	6.21	+4.02	-1.72	-0.09	+.033	+4.041
1985	122.63	10.06	.0820	10.06	6.30	+3.75	+0.18	+0.01	+.031	+3.796
Total	1,223.74	73.77	DNA	100.35	62.91	DNA	-0.76	-0.05	DNA	+10.899

N = 10

Notes by column:

(1) and (2) source: Table 1

(4) Assume rate = .0820; Awards @ '85 rate (100,347) minus Actual Awards (Col. 2) (73,770) = 26,600

(5) Median = .0514; also equals (by chance) 1977 rate.
(-.0514) * Col. (1) assumes actual LTIs; Actual Awards (73,770) minus Awards @ Median (62,910) = 10,860

(7) LTI_i - Median LTI (122.45)

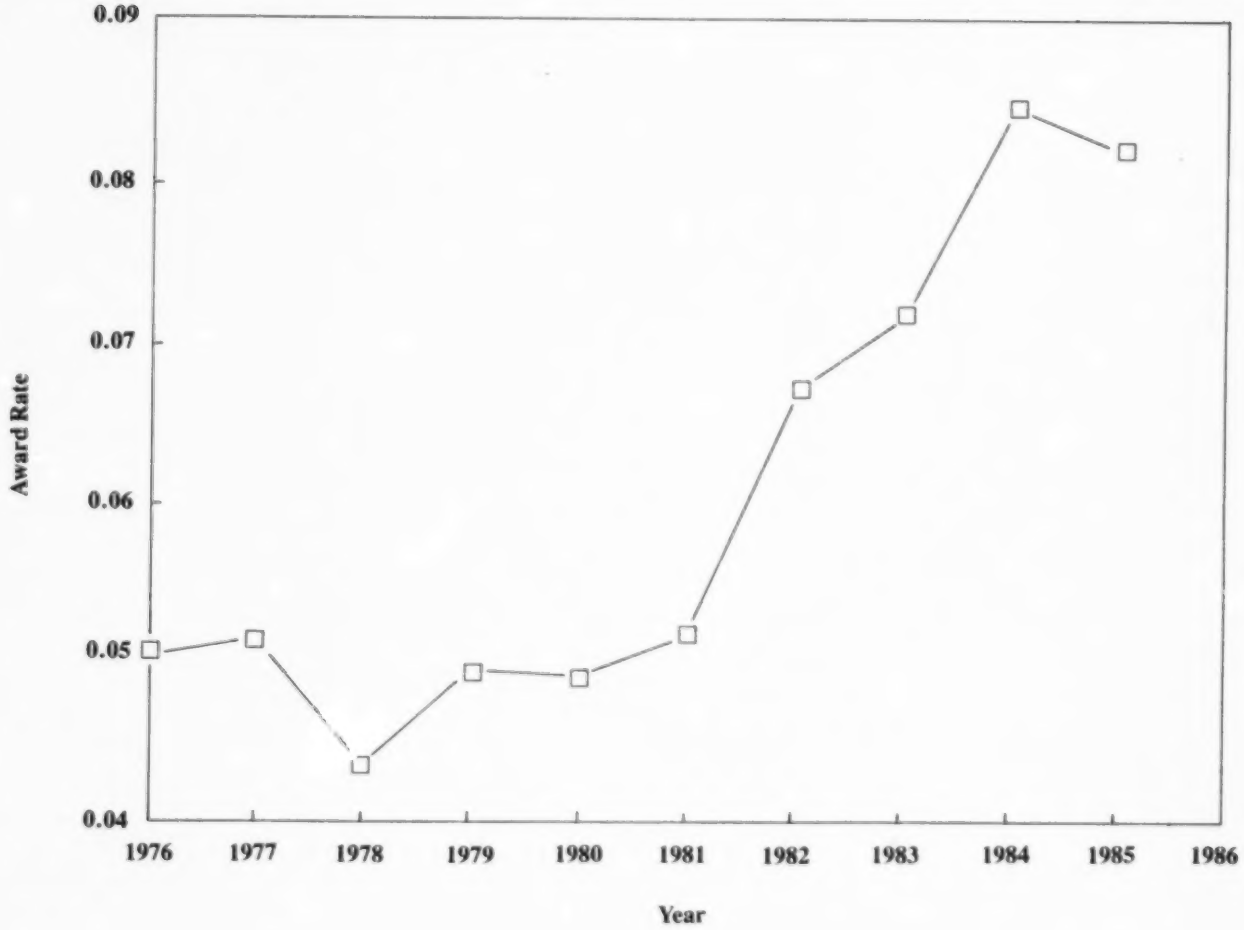
(8) (LTI_i - Median LTI) * Median Award Rate (.0514)

(9) Award $Rate_i$ - Median Award Rate

(10) (Award $Rate_i$ - Median Award Rate) * Median LTI

Figure 2

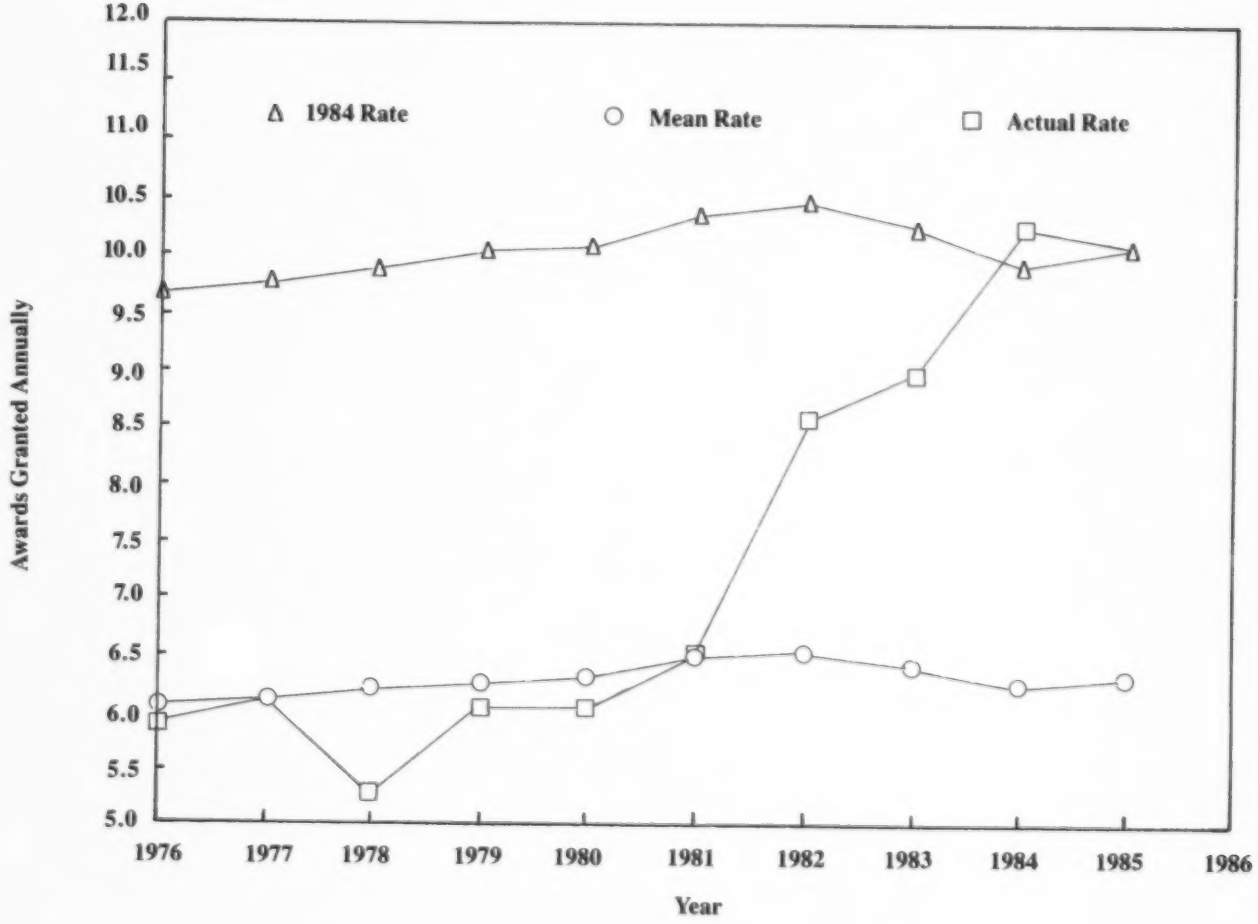
Changes in Award Rates



Award Rate: proportion of LTIs granted life pensions

Figure 3

Number of Awards Granted Annually at Three Different Award Rates



Award Rate: proportion of LTIs granted permanent pensions

Table 3

New Awards of Life Pensions

Year	Median Age	Years since Accident				Severity of Impairment				Number of Awards	Percent of Total Awards
		Median	Mean	Standard Deviation	Mode	Median	Mean	Standard Deviation	Mode		
Male											
1976	48	2	3.79	(4.56)	2	15	15.76	(12.52)	15	4,975	87.9
1977	48	2	3.71	(4.76)	2	10.8	14.50	(12.40)	10	5,473	89.2
1978	48	2	3.70	(4.79)	2	10.0	13.80	(12.32)	10	4,710	89.3
1979	49	3	4.23	(5.50)	2	10.0	13.75	(12.57)	10	5,392	89.2
1980	48	3	4.14	(5.19)	2	10.0	15.22	(14.89)	10	5,308	87.7
1981	49	3	4.28	(5.29)	2	10.0	15.25	(13.64)	10	5,602	85.6
1982	48	3	4.21	(6.01)	2	10.0	14.78	(13.18)	10	7,313	85.6
1983	48	2	4.14	(5.77)	2	10.0	13.91	(12.60)	10	7,547	84.4
1984	47	2	3.95	(5.00)	2	10.0	13.99	(11.84)	10	8,466	82.8
1985	48	2	4.64	(6.28)	2	10.0	14.25	(13.15)	10	8,293	82.4
Female											
1976	48	3	3.24	(2.68)	2	15	15.67	(11.27)	10	687	12.1
1977	48	3	3.40	(3.07)	2	10.5	13.77	(7.72)	10	662	10.8
1978	49	3	3.55	(3.32)	2	10	13.82	(9.27)	10	562	10.7
1979	49	3	3.96	(4.49)	2	10	13.59	(9.48)	10	655	10.8
1980	49	3	3.75	(3.99)	2	10	14.13	(10.32)	10	745	12.3
1981	48	3	3.57	(3.10)	2	14.4	15.77	(12.05)	10	941	14.4
1982	46.5	3	3.77	(4.59)	2	10	14.00	(8.85)	10	1,230	14.4
1983	47	3	3.40	(3.52)	2	10	13.77	(9.52)	10	1,392	15.6
1984	46	3	3.36	(3.59)	2	12	13.60	(8.34)	10	1,764	17.2
1985	46	2	3.40	(4.38)	2	10	12.99	(8.67)	10	1,772	17.6

SOURCE: WCB, Ontario Actuarial Services File RD 63.

Table 4

Legislative Amendments to Increase Workers Compensation Benefits

Year		Percent Increase
1975	(1975)*	10
1976	(1978)	11
1977	(1978)	8
1978	(1978)	6
1978	(1979)	2
1979	(1979)	10
1980	(1981)	9
1981	(1981)	10
1982	(1982)	9
1983	(1983)	5
1984	(1984)	5
1985	(1985)	5

* Number in parentheses is the year that the legislation was enacted.

SOURCE: Actuarial Services, 27 January 1983, RC 63/02310

Amendments to the Act

1975 Amendment: increase and inflation adjust benefits, change the ceiling; coverage extended to:

1. auxiliary members of Police Forces and those who assist in Search and Rescue at the request and direction of Ontario Provincial Police.
2. combine applications for personal coverage by employers, executive officers, and those deemed to be employers and independent operators.

1978 Amendment: Bill 126 – increase and inflation adjust benefits and ceiling

1979 Amendment: Bill 109 – increases in ceiling and benefits

1981 Amendment: Bill 129 – increases in ceiling and benefits

1982 Amendment: Bill 205 – change in name – "Workmen's" becomes "Workers'" and expression "workers" becomes "employees."

adjust temporary disability benefits of a worker who has previously received an adjustment under Section 42, subsection 1, if the worker returns to work but because of recurrence of the temporary disability of the worker is unable to continue working and he or she then receives temporary disability benefits for 12 consecutive months after the recurrence of the disability; ceiling and benefits increased.

1983 Amendment: Bill 66 – increased ceiling and benefits.

Changes to Vocational Rehabilitation Services

- First offered in 1924 to severely disabled only.
- Expenditures could not exceed $100,000; later (1938), it was increased to $200,000 and a separate vocational rehabilitation department was established.
- 1974, via Section 54, expenditure ceiling lifted; very broad application of the Section, hence, enormous increases in expenditures and staff.

Policy Changes

In June 1983, changed administration of Section 43(5):

- Supplements to be paid for 1 year with review. Previously 6 months with review – or actually 3 months, 6 months, 9, 12 with review.

- Older worker supplements as of June 1983 were stopped because considered discriminatory. Had to qualify for full supplement. However, toward end of 1983 or early 1984, older worker supplements were reinstated.

- Policy clearly stated receipt of CPP (Canada Pension Plan) benefits was a ban to receiving a supplement. Effective June 1985 this particular policy was rescinded (for payments prior to April 1, 1985) retroactive to June 1983.

Another change in the process of determining pension eligibility was the creation of regional offices with decision-making powers formerly reserved to the main office of the Workers' Compensation Board. Offices in Sudbury and London opened in November and December 1980. It is not clear whether the decentralization affected the award rate. The sharp increase in award rates beginning in 1981 coincides with the first full year of operation for the regional offices.[6] Further study is required to determine the nature and extent of the relationship, if any, between the increase in award rates and the establishment of the regional centers.

Summary

Increased award rates are the most important cause of the increase in pension awards between 1976 and 1984. The rates have not risen because claimants are older or more severely disabled.[7] The increased proportion of pensioners who are women may have increased award rates but the effect should be small. These results suggest that the most productive direction of subsequent research is an investigation of the relationship between award rates and changes in the methods used to determine eligibility for life pensions.

These conclusions are speculative but consistent with the data. They depend on the assumption that the duration between the time of accident and time of award equals the average time distribution from 1977 through 1985. Our inability to separate second claims from first awards of new pensions makes it difficult to evaluate the validity of that assumption. Our best approximation is that the "new" awards made more than four years after injury are, in fact, additional claims for an injury which lead to a prior award. The biases created by the second award phenomenon are eliminated if one evaluates data on the stock of active pensioners rather than on new awards. The price of using the active pensioner data is the loss of information on annual changes in award rates. In the next section we describe the characteristics of active pensioners and compare them to the trends observed for new awards.

Active Pensions 1976 to 1985

Active life pensions increased from 41,425 in 1976 to 98,110 in 1985. The number of persons receiving a pension benefit in any year equals the previous year's stock, minus the pensioners who die, plus the number of newly awarded pensions. In other words, the net increase of 56,685 pensions (98,110 - 41,425) is the sum of 73,770 new pensions minus 17,395 terminations. The sources of increases in new awards have been discussed. This part of the report considers the factors which influence the average duration of pensions once they are awarded.

Three of the factors that influence the expected life of a pensioner are age, severity of impairment and sex. The effect of age is obvious and it is well known that the average life expectancy of women exceeds that of men. The mean and median ages for both men and women who are pensioners vary between 53 and 54 for the years 1976 through 1985. Changes in age are not, therefore, a reason for the increase in the number of active pensions.

The effect of severity of impairment on longevity is not well defined. Generally, impairments don't affect longevity unless the impairments are severe.

The mean severity of impairment among active pensioners decreases in every one of the ten years (Table 5, Figure 4). In 1976 the mean severity ratings are 20.73 percent (men) and 18.10 percent (women). In 1985 the ratings are 18.01 percent (men) and 16.07 percent (women). The severity ratings shown in Table 5 are also higher in every year than the mean ratings for new awards in the same years. In 1977, for example, the mean severities among newly awarded pensioners are 14.50 percent (men) and 13.77 percent (women) (Table 3).

[6] The regional offices collect and evaluate claims but do not make awards.

[7] This inference is correct if the (unknown) distribution of age and severity among LTI claims is constant over time.

Table 5

Life Awards Active at Year End

Year	Percent Disability						
	All Pensioners			Men		Women	
	Mean	Median	Mode	Mean	Median	Mean	Median
1976	20.51	15	10	20.73	15	18.10	15
1977	19.89	15	10	20.11	15	17.62	15
1978	19.40	15	10	19.60	15	17.34	15
1979	18.92	15	10	19.12	15	17.01	15
1980	18.71	15	10	18.90	15	16.88	15
1981	18.62	15	10	18.81	15	16.97	15
1982	18.44	15	10	18.64	15	16.78	15
1983	18.14	15	10	18.35	15	16.51	15
1984	18.00	15	10	18.25	15	16.32	15
1985	17.76	15	10	18.01	15	16.07	15
	Years since Accident						
1976	11.10	9	4	11.36	9	8.35	7
1977	10.89	8	3	11.15	9	8.32	7
1978	10.93	9	4	11.17	9	8.60	7
1979	11.02	9	4	11.24	9	8.90	7
1980	11.16	9	4	11.39	9	9.12	8
1981	11.25	9	5	11.50	9	9.14	8
1982	11.24	9	6	11.50	9	9.16	8
1983	11.28	9	7	11.56	9	9.13	8
1984	11.25	9	3	11.57	9	9.01	8
1985	11.33	9	4	11.68	9	9.05	7

Year	Women as a Percent of Pensioners
1976	8.66
1977	9.04
1978	9.30
1979	9.58
1980	9.94
1981	10.50
1982	11.06
1983	11.67
1984	12.46
1985	13.08

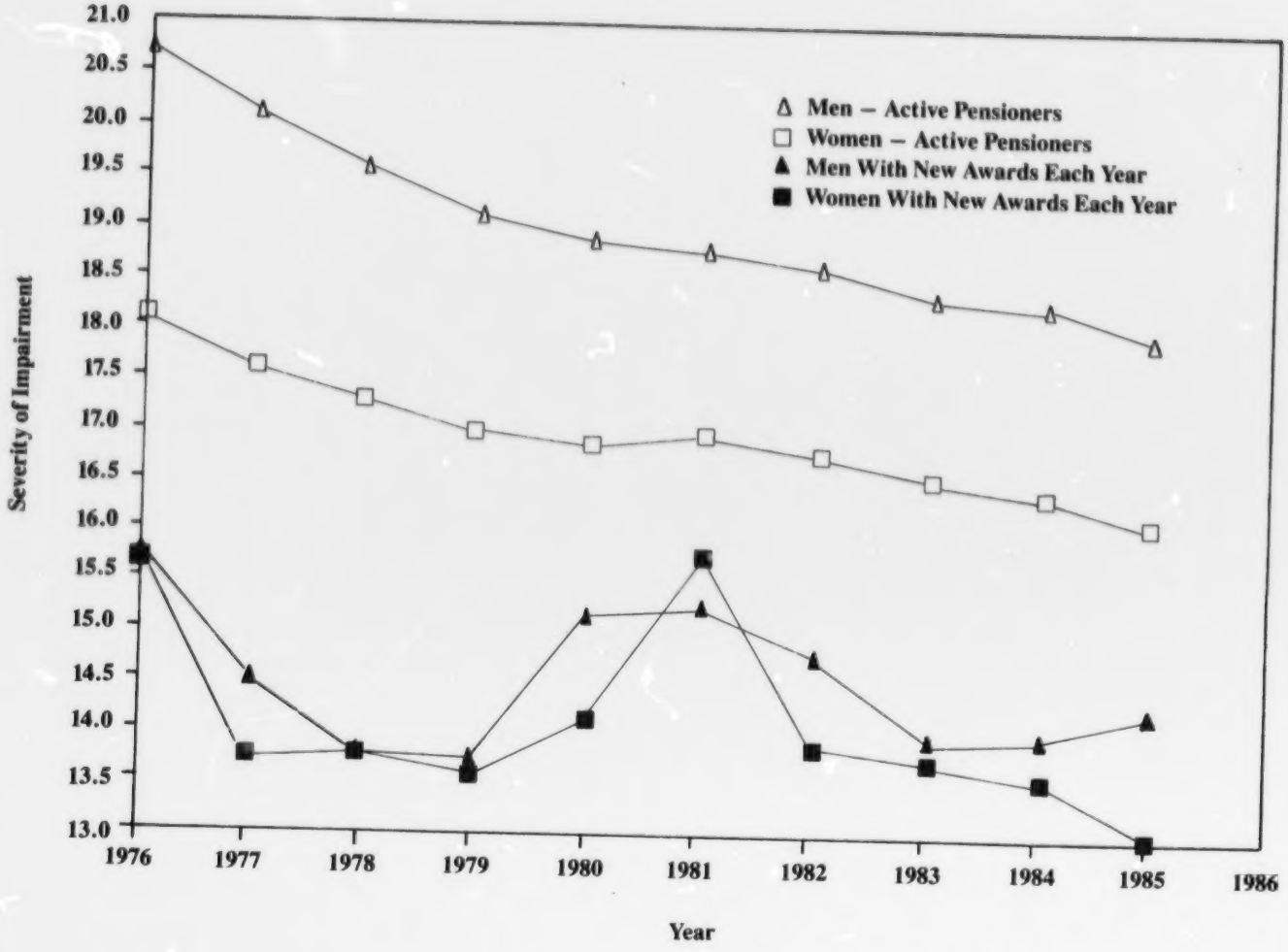
SOURCE: WCB, Ontario Actuarial Services File RD 63.

The data show that the average severity of impairment among active pensioners is declining, *in part*, because new pensioners are less severely impaired than pensioners whose benefits terminated. Declines in the severity of impairment are consistent with the expectation that the longevity of pensioners is not decreasing and that it could be increasing. The Board's data on terminations could be used to measure trends in the longevity of pensioners.

The proportion of active pensioners who are women increased from 8.66 percent in 1976 to 13.08 percent in 1985. The proportion increased continuously over the ten years, suggesting a continuing increase in the average longevity of pensioners.

Inferences from these simple comparisons are approximations, but the results suggest that the duration of pensions is increasing because more awards are being made to less severely impaired persons and because of increases in the proportion of pensioners who are women. Increased longevity increases the stock of active pensions in each year by lowering the annual rate of terminations. Thus, the stock of pensioners increases even if the number of new awards is constant.

Figure 4
Severity of Impairment



The data on duration are consistent with the trends that we described. Mean duration from time of accident to end of the current year increased continuously among active pensioners from 10.89 years (1977) to 11.33 years (1985) (Table 5). If award rates continue to increase and the duration of active pensions also increases, the growth in active pensions will accelerate.

We have described the growth in the number of pensions and speculated in its probable causes. The next section considers the growth in expenditures and the contribution of increasing benefits per pension to that growth.

The Value of New Awards 1976-1985

The nominal value of new Schedule 1 pension awards increased from $81.3 million (1976) to $296.7 million (1985) (Table 6).

A substantial part of the increase is due to the increased number of awards. We must also consider the extent to which the increase reflects inflation and changes in the average real value of the award.

Inflation

In recent years, price inflation and the corresponding statutory adjustment of benefits account for much of the increase in nominal expenditures. The legislative amendments are summarized in Table 4. Bruce Neville converted nominal expenditures to 1985 dollars using the adjustments to the Act as the conversion factors (Table 6). The annual average increase in the value of awards is 16.9 percent in nominal dollars or 8.5 percent in constant (1985) dollars. Analysis of the other influences on the value of new awards is conducted in terms (1985) dollar expenditures.

Benefit per Pension

Except for price inflation, average amounts per pension increase slightly from 1976 through 1984. The average value per new award ranges from a low of $25,183 (1979) to $30,845 (1983) (Table 6). The arithmetic mean for the ten years is $25,259. If the average award in each year equalled the mean, award values would have totaled $1,863,360,000 instead of $2,116,330,000, but, unlike the trend in award rates, the difference (+$252,970,000) does not result from a clear positive trend. Annual deviations from the mean are small and no systematic trend in award values is observed.

The results show that, except for adjustments for inflation, the average value of new pension awards has fluctuated narrowly about the ten-year average of $30,659. Changes in real average awards do not, therefore, contribute significantly to increased total amounts awarded.

Supplementary Benefits

For a given number of pensioners, the award amount per pensioner is increased if the proportion of pensioners who receive supplementary awards increases or if the average amount of a supplementary award is increased. Supplementary awards based on wage loss, for example, will increase in constant dollar terms if average wages increase over time. The results that we have described do include supplementary benefits in the expenditures.

Summary and Conclusions

The descriptive data for 1976 through 1985 suggest that increases in award rates are the primary cause of the growth in pensions. The increase in award rates does not appear to result from changes in the age or severity of impairment of injured workers, suggesting that award rates have increased because of changes in the evaluation of eligibility for life pensions. The sharp increase in award rates after 1981 suggests that it would be useful to determine what effect, if any, the creation of regional offices had on the award rates.

Except for inflation, changes in the average value of a life pension have increased slightly since 1976. The number of active pensions is increasing with the rise in awards and, possibly because of increases in pensioners' longevity. This phenomenon is consistent with the reduction in the severity of disability among pensioners and with the increase in the proportion of pensioners who are women.

This report describes the increases in award rates but cannot explain the reasons for the increases. It should be used as a guide to a more complete and more rigorous examination of the changes which induced the increases in award rates.

Table 6

Value of New Awards 1976-1985

Year	(1) Pension Awards (millions)	(2) 1985 Factor	(3) Award Costs 1985 (millions)	(4) New Awards (thousands)	(5) Average Amount Award (3)/(4)	(6) Awards Due to Difference in Rate (thousands)	(7) Cost Due to Difference in Award Rates, 1985 Dollars (millions)	(8) Percent of Award Costs (7)/(3)	(9) Award Value at Mean
1976	$ 81.3	1.941	$ 157.80	5.95	$26,521	-0.11	$- 3.21	(1.85)	150.29
1977	88.5	1.800	159.30	6.14	25,945	-0.02	+ 0.62	(0.33)	155.09
1978	81.6	1.664	135.78	5.27	25,765	-0.93	- 26.37	(17.65)	133.11
1979	100.7	1.513	152.36	6.05	25,183	-0.22	- 6.15	(3.64)	152.82
1980	128.4	1.388	178.22	6.05	29,458	-0.27	- 8.88	(4.46)	152.82
1981	158.8	1.262	200.41	6.54	30,644	+0.05	+ 1.52	0.76	165.19
1982	216.2	1.158	250.36	8.54	29,316	+2.00	+ 58.63	23.42	215.71
1983	250.0	1.103	275.75	8.94	30,845	+2.54	+ 78.35	28.41	225.82
1984	294.9	1.050	309.65	10.23	30,269	+4.02	+135.01	39.30	258.40
1985	296.7	1.000	296.70	10.06	29,493	+3.76	+124.99	37.37	254.11
TOTAL		–	$2,116.33	73.77	–		+330.19	–	1,863.36

Notes by column: (1) SOURCE: Actuarial Services schedule 1 awards V422 December (OD-1455).

(3), (5), (7) Value of New Awards 1976-1985 Actuarial Services 5/22/86 File RD 63/04610.

(4) Table 2, column (2).

(6) Table 2, column (6).

(9) Mean average value per award = $30,659 = (Total column 5)/10 years.

APPENDIX C

Perspectives on Wage Loss Benefits for Workers' Compensation Pensioners in Ontario

by

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September 8, 1986

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Professor John F. Burton, Jr., of Cornell University was an invaluable source of information on the characteristics of wage loss plans in the United States. Data on Ontario pensioners were collected by the Ontario Workers' Compensation Board. Alan Tebb, General Manager, and Thomas Parry, Research Director of the California Workers' Compensation Institute, were most helpful in providing additional information on their survey of Workers' Compensation clients. Professor William Curington of the University of Arkansas provided the time series data on the characteristics of Workers' Compensation pensioners in New York State.

Introduction

The Province of Ontario is considering the adoption of Workers' Compensation benefits that would be paid to partially disabled workers who incur wage losses because of their disability. Benefits for permanent partial disability are currently based on impairment ("scheduled benefits"). Workers whose impairment of earning capacity is "greater than usual for the nature and degree of their injury" may also receive a type of wage loss benefit, that is, the 43(5) supplement.[1] Few dispute the claim that wage loss benefits would be more equitable than scheduled benefits, but the claim has not been tested by a study of a wage loss plan.

This study estimates the ratio of wage losses to the potential wages of workers who would be eligible for benefits if Ontario adopts the wage loss principle. Absent studies of wage loss plans, the best we can do is to estimate wage losses. These data are a base from which one can simulate the effects of a variety of wage loss benefit proposals.

We use data from two surveys of Workers' Compensation pensioners in Ontario and from surveys of Workers' Compensation clients in Florida, New York and Wisconsin.

This report contains four sections. It begins by summarizing studies of the wage losses of injured workers and the inequities in Workers' Compensation benefits that wage loss approach is designed to correct.

The second section describes the data and methods used to estimate wage losses among Ontario pensioners who received 43(5) supplements in 1983 and Ontario workers who were surveyed in 1981.[2]

Section three compares the estimated wage losses of 43(5) pensioners with the wage losses of a 1981 sample of all types of pensioners.

The fourth section describes our estimates of the wage losses of partially disabled workers in Ontario. The estimates use Ontario data where possible and rely on U.S. data, primarily from New York State, when Ontario data are not available.

Previous Studies of Injured Workers

Equity in the Distribution of Benefits

Most Workers' Compensation programs pay scheduled benefits for permanent partial disability. The "schedule" is a table of benefits, expressed as a percentage of pre-injury wages, classified by the type and severity of disability. Scheduled benefits promise administrative simplicity and maximization of incentives to return to work. Administering scheduled benefits is simple if workers and administrators quickly agree on the disability rating that is used to calculate benefits.[3] Once the disability is rated, scheduled benefits provide stronger work incentives than wage loss benefits because they are not reduced for post-injury earnings.[4]

The advantages of scheduled benefits are obtained at the cost of substantial inequities in the compensation of injured workers. Figure 1 describes the relationship between scheduled benefits and wage losses among New York PPD cases.[5] The ratio of compensation to wage losses is extremely high at low losses and very low at high losses. Similar relationships are reported by

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[1] Section 43(5) is renumbered to Section 45(5) in the July 1985 version of the Ontario Workers' Compensation Act. This report uses the older numbering.

[2] A complete description of the data and methods used is available from the author.

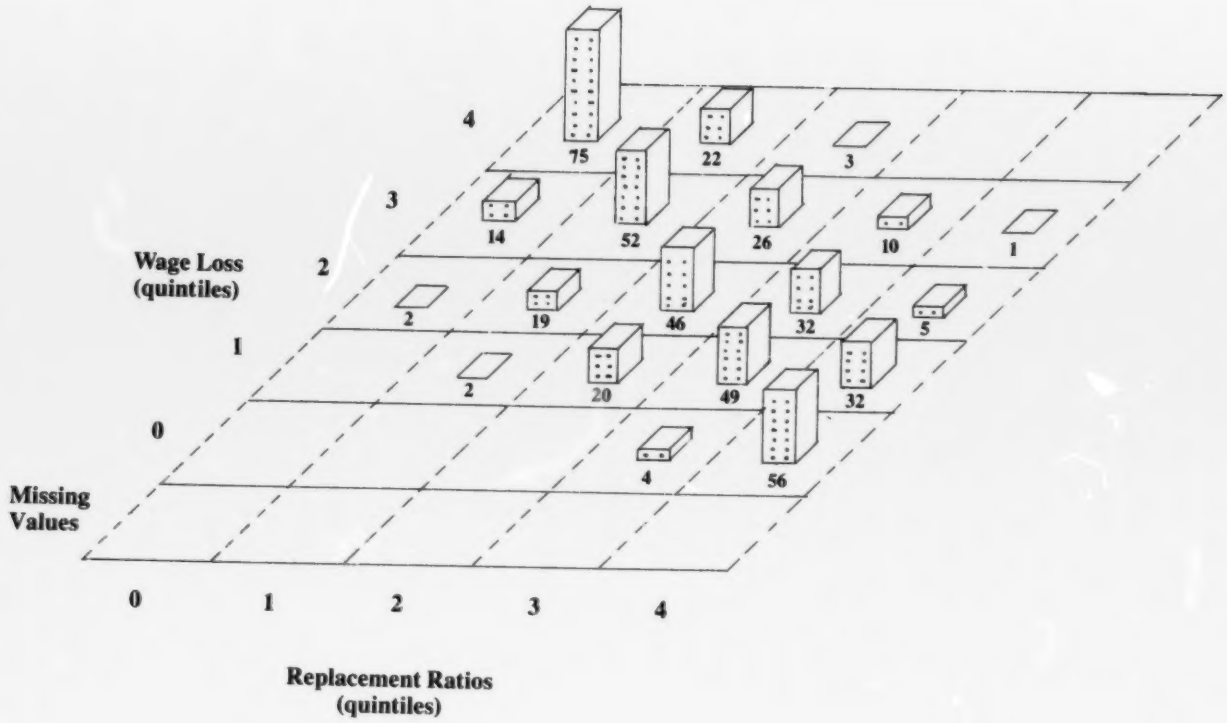
[3] Larson suggests that disputes over ratings in the United States make the process expensive, but there are no empirical evaluations of his suggestion. See Arthur Larson, "The Wage-Loss Principle in Workers' Compensation," *William Mitchell Law Review*, Vol. 6 (1980), pp. 501-532.

[4] William G. Johnson, "The Disincentive Effects of Workers' Compensation Insurance," in John D. Worrall (ed.), *Safety and the Work Force: Incentives and Disincentives in Workers' Compensation Insurance* (Ithaca: Cornell University, ILR Press, 1983).

[5] William G. Johnson and William P. Curington, "Wage Losses and Workers' Compensation Benefits 1970-1983," in *Research Papers of the New York State Temporary Commission on Workers' Compensation and Disability Benefits*, April 1986, pp. 1-79.

Figure 1

PPD Workers
Wage Loss vs. Replacement Ratios:
Wage Growth Standard
(cell totals = number of cases)



SOURCE: William G. Johnson and William P. Curington, "Wage Losses and Workers' Compensation Benefits 1970-1983," in *Research Papers of the New York State Temporary Commission on Workers' Compensation and Disability Benefits*, April 1986, pp. 1-79.

Johnson, Cullinan and Curington (1979); Burton and Vroman (1979); CWCI (1984); and Johnson and Curington (1986).[6] The inequities created by scheduled benefits is one of the reasons for wage loss benefit proposals.

One question usually asked about wage loss benefits is the extent to which they increase benefit payments relative to a scheduled benefit plan. A study of scheduled benefits in New York State suggests that a pure wage loss approach can more equitably distribute benefits without substantially increasing expenditures.[7] The workers lost $5,048,024 in foregone gross wages and received $3,351,381 in scheduled benefits.[8] Sixty-two and three-tenths percent of the total wage loss was incurred by 39 workers who did not return to work after their accidents. The 39 workers received $375,229 in benefits, replacing an average of 11.9 percent of their losses. Benefits totaling $176,108 were paid to 44 other workers with no wage losses and the balance ($2,800,044) went to 443 workers whose wage losses totaled $1,887,409. New York Workers' Compensation benefits are calculated to equal 66⅔ percent of the pre-injury, before-tax wage, subject to absolute minimums and maximums. If each New York worker had been paid 66⅔ percent of gross wage loss, expenditures would have been only 0.9 percent greater than under the schedule.

This is a remarkable example of how, in theory, wage loss benefits can improve the equity of compensation at little additional cost to a Workers' Compensation plan. Unfortunately, no one has evaluated the equity of an actual wage loss system. In the next section we describe some of the differences between the principle of wage loss benefits and "wage loss benefit" laws.

Experience with Wage Loss Benefits

Four provinces and six states provide wage loss benefits for permanent partial disability. The benefit formulas and the coverage of PPD claims vary among the ten jurisdictions.

New York pays wage loss benefits ("non-scheduled" benefits) to approximately 2 percent of its PPD claims. Michigan has a wage loss benefit law but compromise and release settlements are used so extensively that students of the problem disagree on whether it is a true wage loss law.[9] Florida's plan, which was introduced in 1979, is the most comprehensive in the United States.

Wage loss benefits have recently been adopted in Louisiana, Pennsylvania and Massachusetts. It is too soon to know whether the administration of the laws will produce a true wage loss system. The most critical issue is the extent to which compromise and release settlements are prohibited.[10]

Saskatchewan introduced the first Canadian wage loss plan in 1979. Similar plans have been adopted in more recent years by New Brunswick, Newfoundland and Quebec. Canada's wage loss benefit laws adhere more closely to the wage loss principle than do U.S. plans. The Canadian plans pay benefits equal to 90 percent of wages (net taxes) plus a lump sum payment for physical impairment, regardless of wage losses. Benefits are adjusted for inflation. Most U.S. plans use pre-injury wages rather than growth adjusted wages as the basis for calculating wage losses and often limit the duration of benefits. As workers' post-injury wages increase with inflation and gains in productivity, the difference between pre-injury and actual wages declines, even though the difference between potential and actual wages is constant or increasing.

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[6] William G. Johnson, Paul R. Cullinan and William P. Curington, "The Adequacy of Workers' Compensation Payments," in *Research Reports to the Interdepartmental Task Force on Workers' Compensation*, Vol. VI (Washington, D.C.: Government Printing Office, 1979); John F. Burton, Jr. and Wayne Vroman, "A Report on Permanent Partial Disabilities Under Workers' Compensation," *Research Report of the Interdepartmental Workers' Compensation Task Force 6* (Washington, D.C.: U.S. Department of Labor Employment Standards Administration, 1979), pp. 11-77.; California Workers' Compensation Institute, *Economic Consequences of Job Injury* (San Francisco: CWCI, December 1984); Johnson and Curington, "Wage Losses and Workers' Compensation Benefits 1970-1983."

[7] Johnson and Curington, "Wage Losses and Workers' Compensation Benefits 1970-1983."

[8] The estimates assume that wage losses end at age 65 and that wage loss equals the product of pre-injury earnings and duration of absence from work. Wage losses are not reduced for Social Security Disability benefits and the disincentive effects of wage loss benefits are not considered.

[9] Larson, "The Wage-Loss Principle in Workers' Compensation"; John F. Burton, Jr., "Compensation for Permanent Partial Disabilities." A compromise and release settlement is one in which the injured worker surrenders rights to any future benefits for an injury in return for a payment, usually a lump sum.

[10] The remarks in this paragraph are drawn from conversations with John Burton.

Some U.S. plans adjust for inflation but the adjustments are, at best, incomplete. Florida, for example, ignores wage growth in calculating wage losses for workers who incur losses for periods of less than 26 months.[11] Wage losses of workers for longer durations are discounted at the annual rate of change in the Consumer Price Index. This peculiar procedure is better than ignoring wage growth but produces estimates of wage losses that are less than would result from the more usual practice of increasing potential wages for inflation. All else equal, Florida workers with long durations of wage losses are less well compensated than those with shorter durations, an inequity that wage loss benefits are supposed to remove.

Some of the other features of the Florida law that create a difference between measured and real wage losses are: (1) the requirement that benefits are paid only for losses that exceed 15 percent of the pre-injury wage; (2) a worker must incur wage losses in three consecutive months in each two year period to retain eligibility for wage loss benefits; (3) earnings during the post-injury period may be deemed to be greater than actual earnings if it is found that the worker is "able" to earn a greater amount (Berkowitz and Burton, n.d.).[12] The Florida law is an important example of how "wage loss benefit" laws can differ significantly from the concept of wage loss benefits.

Since there are no empirical studies of the adequacy or equity of existing "wage loss" laws we must rely on studies of wage losses among injured workers as the basis for projecting the probable effects of a wage loss benefit law in Ontario. The wage loss studies are reviewed in the next section.

Earnings and Wage Losses

Wage losses vary with the duration of absence from work following injury and the extent to which the productivity of workers who return to work is impaired. It is important to distinguish between the two types of wage losses. We begin the discussion by reviewing information on absences from work following an injury.

Return to Work. Studies of Workers' Compensation pensioners in the U.S. and ill or injured persons in the United Kingdom show that the time pattern of post-injury employment can be characterized as one in which (see Figure 2):[13]

(1) Approximately 33⅓ percent of injured workers return to work within one month.

(2) An additional 33⅓ percent of the workers are re-employed between the second and sixth month of the post-injury period.

(3) An additional 17 percent of the workers return to work between the seventh and twelfth month.

Thus, at the end of the first year, only 16 percent of the workers are not employed. By the end of the third year, nearly all of those who will return to work have done so.[14] We assume, therefore, that the wages and work hours of injured workers in the fourth year following injury are a good proxy for their work and wages for the rest of their worklives. This assumption also distinguishes Ontario workers who would be eligible for wage loss benefits from those not eligible because they are not permanently disabled.

The typical worker will receive temporary disability benefits for one year or less, return to work, suffer no subsequent wage losses, and not receive a wage loss benefit.

Our information on post-injury absence from work is obtained from three states in the U.S. The pattern of return to work is influenced by characteristics such as sex and severity of injury. Table 1 shows that more severe disabilities lengthen absence from work and that women, all else equal, are absent from work for a longer time than are men. Our final estimates will be controlled for differences in sex and severity.

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[11] Duration is defined as the period from the date of maximum medical improvement.

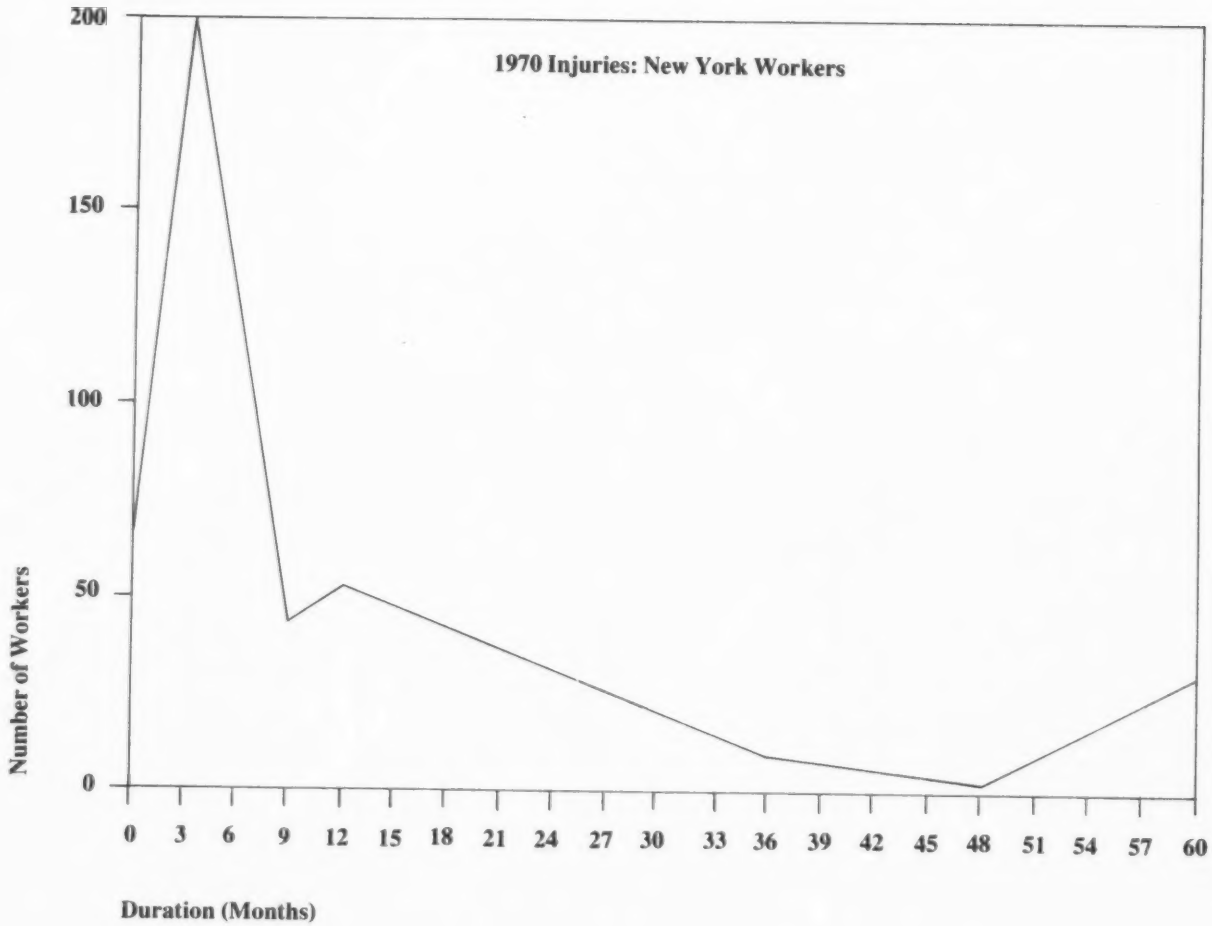
[12] Monroe Berkowitz and John Burton, "The Transformation of Florida to a Wage-Loss State," in *Permanent Disability Benefits in the Workers' Compensation Program: A Multistate Study of Criteria and Procedures*, Chapter 10. Cited by permission of the authors.

[13] The data in Figure 2 are from New York (Johnson and Curington 1986). Although the relationship varies among states and between states and the U.K., the general functional relationship is the same. The U.K. data are for shorter average durations because they are not limited to permanent disabilities.

[14] No one has studied the effect of injury on spells of work absence that occur after an injured worker is re-employed. Our assumption is based on the five to six years after injury.

Figure 2

Time of Injury Until First Return to Work; PPD



NOTE: Durations greater than 48 months are the truncated values of durations for 39 workers who did not return to work.

Table 1

Mean Years Absent From Work Because of Injury During the Period 1970-1975

	Men			Women		
	All Severities	Severity = 10%	Severity > 10%	All Severities	Severity = 10%	Severity > 10%
Florida	0.72	0.83	0.69	1.52	2.38	1.25
New York	0.79	0.61	0.82	1.11	0.98	1.14
Wisconsin	0.64	0.25	0.70	1.33	0.23	1.41

Injured workers may incur losses even though they return to work because their impairment limits their productivity. Our estimates of wage losses include losses due to absence and losses due to limited productivity. The next section describes the sources of some of the data we use to make our estimates.

Estimated Wage Losses

Most of the information on the wage losses of partially disabled workers is contained in three studies commissioned by the U.S. Interdepartmental Workers' Compensation Task Force. The studies analyze the adequacy and equity of Workers' Compensation benefits over a period of from five to six years following an injury.[15]

Burton and Vroman report the sum of wage losses for a five year period rather than annual losses so we cannot use their results to predict the expected wage losses of Ontario workers.[16]

Johnson, Curington and Cullinan omit the second and third year after injury but estimate the ratio of benefits to wage losses in the first, fourth and fifth year after injury.[17] We revised their data on Workers' Compensation clients in Florida, New York and Wisconsin to estimate wage loss ratios. Potential wages equal pre-injury wages adjusted for annual average percent changes in wages in the industry of pre-injury employment.[18] Gross wage losses were adjusted to exclude losses that were not caused by the injury. Differences between potential wages and post-injury wages are not attributed to injury if the worker satisfied *all* of the following criteria:

(1) returned to work for the pre-injury employer;

(2) worked the same number of hours as before the injury;

(3) was not absent from work for reasons related to the injury after returning to the pre-injury job;

(4) in 1975, worked at the same type of job as before injury or worked at a different job for reasons other than the effects of the injury;

(5) did not receive Social Security Disability Insurance (social insurance for permanent total disability) at any time after injury.

[15] The most recent data on permanently disabled workers are for workplace injuries that occurred in California during the 12 months ending June 30, 1976. The study was conducted by the California Workers' Compensation Institute (CWCI).

One thousand seventy-six workers were interviewed between 12/8/81 and 3/24/82. The California results are a poor proxy for Ontario because the sample includes low back and permanent total disability cases in addition to workers with partial disabilities. Gross wage losses in the four years after injury averaged 44.1 percent of potential wages (Letter of June 17, 1986). CWCI estimates that 55 percent of gross wage loss or approximately 24.2 percent of potential wages is due to injury. See CWCI, *Economic Consequences of Job Injury* (San Francisco, December 1984).

The published results are brief. Although CWCI has been most helpful, supplying us with additional information, the available data are not sufficient for more detailed inferences.

[16] Burton and Vroman, "Permanent Partial Disabilities."

[17] Johnson, Cullinan and Curington, "The Adequacy of Workers' Compensation Payments."

[18] State specific data on industries are used for New York. National averages are used for Florida and Wisconsin.

This adjustment is not completely accurate but it is as objective as possible. It uses employment histories and the workers' own reasons for job changes rather than our judgment to identify wage losses caused by injury. We calculated net wage loss ratios for the fourth (1974) and fifth (1975) year after injury (that is, wage loss due to injury).[19] The mean net wage loss ratio for 1974 for Florida is 22.2 percent; 24.9 percent for New York and 17.3 percent in Wisconsin. In 1975 the ratio is 37.8 percent in Florida, 25.2 percent in New York and 23.1 percent in Wisconsin.[20]

Additional information on wage loss ratios in Wisconsin is provided by Ginnold's study for the Interdepartmental Task Force on Workers' Compensation.[21] Ginnold studied 1968 accidents which resulted in permanent partial disabilities. Potential wages in each of the years 1969-1973 equal each worker's 1966 earnings increased for inflation and productivity (Ginnold uses an "age-education" factor from Census data). Earnings data for 1966-1973 were obtained from the workers' federal and state income tax returns. The use of income tax returns makes Ginnold's measures of earnings the most accurate of the wage loss studies. Ginnold does not, however, separate wage losses due to injury from those caused by unemployment or early retirement.

The sample represents men and women age 20-59 with severity ratings of 10 percent or more, but also includes all compromise and release cases and back cases rated as low as 5 percent. The results on women's wage losses are not published.[22]

Ginnold's estimates of the ratio of wage losses to potential earnings are reproduced in Table 2. Although there are exceptions, the ratios typically decline in each year following the injury. Average wage loss is 20.7 percent of potential earnings in the first year after injury (1969), 12.29 percent in the fourth year (1972) and 13.99 percent in 1973. Average wage losses over the years 1968-1973 equal 15.7 percent of potential wages.[23]

In 1973, the wage loss ratios of men with disability ratings of less than ten percent were 7 percent (for ratings of 0-5 percent) and 8 percent (ratings of 5-10 percent).

Table 2

Earnings Loss as Percentage of Potential Earnings by Age, Male Injuries, Wisconsin

Age Group	1968	1969	1970	1971	1972	1973	Mean Severity (percent)
20-29 (N=105)	21.0	18.3	9.9	9.7	7.2	a	10.2
30-39 (N=122)	20.8	14.0	8.7	11.0	8.8	16.5	11.7
40-49 (N=107)	17.0	22.6	13.9	15.9	13.4	15.2	13.9
50-59 (N=102)	24.1	29.2	18.0	21.0	20.4	24.1	12.7

[a] Actual earnings above "expected."

SOURCE: Ginnold, "Follow-up Study," p. 85.

[19] The 1975 data represent only part of the year and are, therefore, less accurate than the 1974 data which include 12 months of information on employment and wages. The gross wage loss ratios are:
1974: 25.9% Florida; 36.8% New York; and 20.5% Wisconsin
1975: 43.7% Florida; 39.1% New York; and 28.1% Wisconsin.
SOURCES J#1667, 9291, 6798.

[20] These percentages represent the ratio of total wage loss to the sum of potential wages for all injured workers rather than the ratio of losses to potential wages for only those who incurred wage losses.

[21] Richard Ginnold, "A Follow-up Study of Permanent Disability Cases under Wisconsin Workers' Compensation," *Research Report of the Interdepartmental Workers' Compensation Task Force*, Vol. 6, June 1979.

[22] The sample design cannot be adequately described here. For a full description see Richard Ginnold, "Follow-up Study," pp. 81-82.

[23] We calculated this value from Ginnold's table, "Earnings loss as percentage of potential earnings by age, male injuries," in "Follow-up Study," p. 85. The 15.7 percent is the weighted mean of percentage losses for each of five years for four categories of workers.

Our Wisconsin data represent workers who are more severely disabled than those studied by Ginnold. It is not surprising, therefore, that our gross wage loss ratio for Wisconsin male workers in the fourth year following injury is higher (16.3 percent versus 12.3 percent) than Ginnold's.[24]

Our results for the other states (Table 3) are also not strictly comparable to Ginnold's because they differ in method and in the age, sex and severity of the workers represented by the samples. Despite the differences, our results agree with Ginnold's that the ratio of wage losses to potential wages increases with the severity of disability and declines as duration from time of injury increases.

Summary

Our analysis of the net wage losses of partially disabled workers with severity ratings of 10 percent or greater in three states shows that:

(1) The average wage loss in the fourth year after injury is approximately 21.5 percent of the workers' potential earnings.

(2) The average wage loss ratio increases with the severity of the injury but decreases, among a cohort of workers, with duration from date of accident.

(3) Two-thirds of injured workers return to work within six months of their accident and incur small wage losses. From 7 percent to 8 percent of partially disabled workers never return to work, incurring very large wage losses.

(4) The inequities of scheduled benefits to partially disabled workers can, in theory, be eliminated with little increase in total benefit payments.

Ginnold's study shows that men with disability ratings of less than 10 percent lose from 7 to 8 percent of their potential wages.

The U.S. results do not represent the Ontario Workers' Compensation system, but they provide unique data on the wage losses of workers who are similar to Ontario pensioners. Among the states, New York is most like Ontario because it provides both scheduled and wage loss benefits ("non-scheduled") benefits. In the next section we describe the Ontario data and show how we combine them with the U.S. data to estimate wage losses.

Table 3

Wage Losses as Percent of Potential Wages by Sex and Severity of Disability

		1974					
		Florida[a]		New York[b]		Wisconsin[c]	
		Number	Percent	Number	Percent	Number	Percent
Male							
Severity	< 10%	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.[d]
	= 10%	43	19.9	65	20.6	42	13.0
	> 10%	156	20.6	383	25.1	259	16.8
Female							
Severity	< 10%	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	= 10%	43	29.9	11	34.2	4	6.3
	> 10%	47	32.7	62	28.7	51	27.7

SOURCES: [a] J#2356, 2376, 2362, 6673;

[b] J# 258, 267, 278, 286;

[c] J#2397, 2391, 2399, 2403;

[d] Ginnold estimates wage losses equal to 7-8 percent for this sex-severity group in Wisconsin.

[24] Gross wage loss ratios are used because Ginnold's results include losses that are not related to injuries.

Ontario Data

Survey of 43(5) Pensioners

The 43(5) survey is based on a representative sample of the population of 43(5) claimants active at any time between January 1 and May 31, 1983. Persons 65 or older are excluded and one case showing 100 percent disability was also removed. The population, after these exclusions, consists of 5,620 persons.

The sample is stratified by: (1) percent of disability, (2) area of injury, (3) sex and (4) age. There are 750 cases in the sample. The sample qualifies as an equal probability of selection sample (i.e., each case in the population was given an equal probability of falling into the sample). The sample is, therefore, proportionate, or "self-weighting," each case representing 7.4933 cases in the population (5,620/750).[25]

Each worker's benefits and earnings history were obtained from the Board's administrative records. Coding and data transfer to tape (supervised by Doug Cain, Director of the Claims Review Branch) was completed in September 1984.

The results in this report are based on 666 of the 750 cases. The reasons for excluding 84 cases are:

(1) dead at time of survey: 2 cases;

(2) over 65 at date of first award: 2 cases;

(3) temporary or seasonal employment at time of injury: 39 cases;

(4) no record of receiving a life pension or lump sum award: 25 cases;

(5) missing or inconsistent data: 16 cases.

Some of the important characteristics of the 666 workers are summarized in Table 4.

Table 4

Characteristics of 43(5) Pensioners Cases Active at any Time January-May 1983

	Mean	Median	Sum
Age at first award	42.7	42.0	DNA
Severity of impairment	21.7	15.0	DNA
Percent male (%)	84.7	DNA	DNA
Pre-injury annual wages ($)	14,951	14,430	9,957,527
Potential earnings to age 65 ($)	2,496,893	1,363,448	1,662,930,613
Net wage loss to age 65 ($)	2,001,585	1,002,134	1,333,055,662
Net wage loss/potential earnings (%)	80.2	DNA	DNA
Years from accident to first award	3.07	2.27	DNA

N=666

SOURCE: 43(5) Survey.

The 43(5) survey is an excellent source of information on pensioners who receive wage loss supplements. The 1981 survey of active pensioners represents a larger population of pensioners but provides a more limited set of data.

[25] The description of the sample is from the July 25, 1984, description by Martin Frankel, the sample designer.

The 1981 Survey

The Workers' Compensation Board surveyed 9,700 pensioners in 1981.[26] The sample includes cases, such as widows or permanently and totally disabled workers, who would not be paid wage loss benefits. Although we exclude these cases from the 1981 data that we use, the result is not a strictly representative sample of permanent partial disability cases. The survey provides our only estimates of the wage losses of men and women with disabilities rated at less than 10 percent. The characteristics of the 8,961 workers in the sample used in our analysis are described in Table 5.

Table 5

Characteristics of Pensioners, 1981 Survey

	Mean	Median
Severity of impairment	16.8	15.0
Percent Male (%)	89.1	–
Pre-Injury Weekly Wages ($)	$186.03	$165.00
Net Wage Loss/Potential Earnings	26.1	–
N=8,961		

SOURCE: 1981 Survey.

Methods

The 43(5) Survey

Prospective worklife is defined as the time from date of first award of a life or lump sum pension to the date on which a worker is age 65. Total potential earnings for workers holding permanent jobs at time of injury are estimated as the product of prospective worklife and potential earnings.[27] We calculate potential earnings by assuming that pre-injury wages grow at the same rate as the average industrial wage (AIW) for Ontario. Pre-injury earnings equal annualized average weekly wages in the year before the accident.[28] The weekly wage at the time of injury is used for individuals for whom annual data were not available.[29]

We use two measures of post-injury employment. The first is the episodes of employment from the date of first award to the time of survey. The second measure is employment at the time of survey. Persons in permanent jobs at the time of survey are assumed to earn the time-of-survey wage until age 65.[30] The majority of the workers in the 43(5) sample do not return to work to one steady job. Since most of the pensioners who return to work have several episodes of employment interspersed with periods of unemployment, our assumption that employment status at the time of survey predicts employment until age 65 is probably incorrect. The net bias is difficult to predict since overestimates and underestimates of employment from time of survey to age 65 are possible.

The data on 43(5) pensioners are unique because they contain information on the post-injury employment over periods as long as 16 years. We examined the employment histories of pensioners whose accidents had occurred 5 years, 9 to 10 years, and 14 to 16 years before the survey was completed. Table 6 shows the percent of each group employed at various intervals after the accident and the percent employed from the entire sample.

About one-fourth of the injured workers were employed within 12 months of being injured. Employment rates reach a maximum approximately four to five years after the accident and then

[26] Responses were obtained from approximately 80 percent of those surveyed.

[27] Persons employed in temporary and seasonal jobs at time of injury are excluded from the results.

[28] "PDBASIS" in the WCB data files.

[29] "TTBASIS" in the WCB data files.

[30] Persons who hold temporary jobs or are not employed at time of survey are assumed to be not employed from time of survey to age 65.

Table 6

Percent of 43(5) Pensioners Employed N Years after Accident

Employed – Years after Accident	Years between Accident and Survey											
	5		6		7-8		9-10		11-13		14-16	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	26	23	18	25	23	25	19	37	21	54	11	61
2	38	33	23	32	35	38	25	49	22	56	10	56
3	33	29	25	35	40	43	25	49	24	62	10	56
4	43	38	25	35	38	41	29	57	25	64	9	50
5	25	22	27	38	45	48	24	47	22	56	10	56
6	–		17	24	45	48	27	53	20	51	9	50
7	–		–		32	34	24	47	23	59	14	78
8	–		–		9	10	29	57	23	59	13	72
10	–		–		–		2	.04	22	56	14	78
12	–		–		–		–		14	36	12	67
15	–		–		–		–		–		5	28
20	–		–		–		–		–		–	
Number of Workers in Group	114		72		93		51		39		18	

NOTE: The employment variables are dummy variables that indicate whether or not an injured worker is employed in a given year following his accident. Variables were created for each of the first eight years and at increasingly longer intervals until the twentieth year.

SOURCE: J#2031, 2026, 2016, 2008, 2002, and 2021.

decline. Some of the observed declines in employment represent withdrawals from work because of age.

We will combine data from New York with the 1981 and 43(5) surveys of Ontario workers to estimate the wage losses of partially disabled pensioners in Ontario. Wage loss equals potential earnings to age 65 minus the sum of earnings from post-injury employment.[31] If total earnings exceed potential wages, estimated wage losses are set equal to zero since pensioners would not reimburse the Workers' Compensation Board for such differences. Earnings for each post-injury job equal the product of weeks worked and gross weekly wages. These estimates ignore wages foregone before the date of award of a life pension because these losses would be compensable from temporary disability benefits rather than wage loss benefits. The New York results do not strictly represent Ontario but they are the best data available on wage losses of non-supplement pensioners and, as we describe next, the workers appear to be similar to workers in Ontario.

Our results for New York refer to partially disabled workers who receive scheduled benefits. If 43(5) pensioners are similar to New York workers who receive non-scheduled benefits, the scheduled benefit pensioners in New York may also be similar to non-43(5) pensioners in Ontario.

The 666 Ontario pensioners in the 43(5) sample and the New York workers who received non-scheduled benefits are similar in many ways (Table 7).[32] Each group is predominantly male, although the percentage which is male is higher in Ontario (84.6 percent) than in New York (72.0 percent). The average age of the workers is 42.7 in Ontario and 43.8 in New York. The average pre-injury wages of the workers are comparable. The mean weekly wage in Ontario is $281, for New York $261. In Ontario the median wage is $277.50, in New York $249.00.[33]

The two groups of workers differ in the types of jobs they hold and in the industries in which they work. More than half (65.5 percent) of the Ontario workers worked in construction or manufacturing industries, but these industries employed only 34.2 percent of the New York workers. The largest single group (24.7 percent) of the New York workers held jobs in service industries. This difference is also apparent in the data on occupations; 73.5 percent of the Ontario workers but only 48.1 percent of the New York workers held skilled or semi-skilled jobs and a larger percent of New York workers (24.2 percent) than Ontario workers (7.2 percent) were employed in service occupations.

More than half of the pensioners in each sample have back injuries. They represent 54.5 percent of all cases in Ontario and 61.1 percent of the New York cases.

The 1981 Survey

The only year for which wage losses can be calculated from the survey is 1981. Wage loss is defined as the difference between potential and actual earnings. Potential earnings are estimated by assuming that the worker's pre-injury wages change at the same rate as the average industrial wage.

Pensioners were asked to briefly explain the reasons for not working or not working full-time.[34] Our gross wage loss estimates are reduced by including only the losses that pensioners identified as related to their injuries. The net wage loss of pensioners who said their work limitations were "partly due to injury" are assumed to equal 50 percent of their gross wage loss.

Pensioners who were working at the time of survey were *not* asked if their injuries affected their work, preventing us from identifying injury-related losses. We count as wage losses, all differences between the potential and actual wages of employed workers. If the U.S. experience is representative, this assumption substantially overstates the wage losses of employed workers in the 1981 survey. Net wage loss ratios in the U.S. were from 2.1 to 11.9 percentage points lower than gross wage loss ratios (p. 10 *supra*).

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[31] The assumption that worklife ends at age 65 overstates the expected worklife of younger workers and understates the worklife of older workers. It also ignores episodes of unemployment.

[32] Table 7 compares important features of Ontario and New York Workers' Compensation pensioners. Data are available for only 58 workers injured in New York in 1982. For this reason, the larger 1980 sample is the main focus of the following discussion.

[33] It is difficult to compare injuries between the two groups because of differences in the coding of this variable.

[34] The question was not limited to a set of predefined alternatives, and not all responses could be coded. The responses were coded as not working or unable to work full-time (1) due to injury, (2) not due to injury, (3) partly due to injury, or (4) unable to be resolved.

Table 7

Characteristics of Ontario 43(5) Pensioners and New York Non-Scheduled Pensioners

	Ontario		New York			
	1981		1980		1982	
	Number	Percent	Number	Percent	Number	Percent
Sex						
Male	564	84.6	1,558	72.0	37	63.8
Female	102	15.3	607	28.0	21	36.2
Age (years)						
Mean	42.7	–	43.8	–	42.9	–
Median	42	–	44	–	41	–
Maximum	65	–	81	–	76	–
Minimum	17	–	16	–	20	–
Wage						
Mean	$281	–	$261	–	$288	–
Median	277.5	–	249	–	271.5	–
Maximum	932	–	943	–	538	–
Minimum	12	–	0	–	0	–
Industry						
Construction	147	23.4	247	11.6	3	5.2
Nondurables	89	14.2	199	9.4	6	10.3
Durables	175	27.9	281	13.2	11	19.0
Transportation	48	7.7	188	8.9	8	13.8
Trade	38	6.1	417	19.7	6	10.4
Service	66	10.5	524	24.7	17	29.3
Public Administration	5	0.8	124	5.8	5	8.6
Agriculture	7	1.1	25	1.2	–	–
Other Primary	52	8.3	4	0.2	–	–
Finance	–	–	88	4.1	2	3.4
Public Utilities	–	–	27	1.3	–	–
Missing	39	–	41	–	–	–
Occupation						
Professional or Manager	22	3.3	152	7.5	4	7.4
Sales and Clerical	32	4.8	211	10.5	3	5.6
Service	48	7.2	489	24.2	19	35.2
Skilled	153	23.0	363	18.0	8	14.8
Semi-skilled	336	50.5	608	30.1	17	31.5
Laborers	66	10.0	195	9.7	3	5.6
Not Classified	9	1.4	147	???	–	–
Location of Injury						
Back	129	54.4	974	45.0	26	44.8
Spine	–	–	348	16.1	11	19.0
Chest	3	1.3	7	0.3	1	1.7
Hip	1	1.7	41	1.9	1	1.7
Leg/foot	36	16.5	57	2.5	3	5.1
Abdomen	9	3.8	18	0.9	–	–
Head	2	0.8	41	1.7	–	–
Eye	7	3.9	2	0.1	–	–
Arm/hand	34	14.3	35	1.4	–	–
Shoulder/neck	15	6.3	62	2.8	–	–
Multiple parts	–	–	438	20.2	14	24.1
Not Elsewhere Classified	3	1.3	142	6.5	2	3.4
Number of Workers	666		2,165		58	

NOTE: The data from Ontario for location of injury is based on 237 cases for which we had data.

SOURCE: New York data: Special tabulations from NYWC administrative records supplied by Professor William Curington, the University of Arkansas. ONT J#7289, 7261, 1671, 1418; NYNYS82 Job #20145; NYNYS80 Job #20145.

The many problems with the 1981 survey lead us to restrict its use, in the final estimates, to the less than 10 percent disability cases for which it is the only source of information.

The Composite Estimate

The estimate is constructed in the following manner. The population of active pensioners at the end of the year 1984 is classified into groups by sex, the severity of disability and the receipt of pension supplements, producing two groups of pensioners divided by sex and three categories of the severity of disability. The severity categories are (1) less than 10 percent, (2) 10 percent, and (3) greater than 10 percent. The population of active pensioners includes many persons whose pensions (e.g., widow's benefits) would not be changed by a wage loss plan. The inclusion of these cases biases the distribution of cases among the sex-severity category because a large proportion of these cases are women. The net bias is to overstate wage loss ratios because the mean ratios for women are higher than those for men.

The wage loss ratios for pensioners receiving supplements are assumed to be equal to the ratios obtained from the 1983 sample of 43(5) pensioners. The sex-specific wage loss ratios for non-supplement pensioners with ratings of greater than or equal to 10 percent are assumed to equal the New York ratios for the same sex-rating categories.

Non-supplement pensioners with ratings of less than 10 percent are assumed to incur wage losses equal to the percentages of potential wages lost by Ontario pensioners in 1981 with the same severity ratings. The loss ratios (12.8 percent for men, 28.3 percent for women) are likely to be higher than the true rates because the 1981 sample includes 43(5) pensioners. Our only other measure of wage losses for this severity group is from Ginnold's study. Ginnold's ratio for men (< 10 percent severity) is from 7 to 8 percent.

The final wage loss ratio is a weighted mean calculated from each of the sex-severity categories of active pensioners. The 43(5) sample represents the population of active 43(5) recipients but the wage loss ratios from the U.S. and the 1981 survey do not strictly represent non-supplement pensioners. Our results are, therefore, an approximation for which confidence intervals cannot be specified.

Results

The 43(5) Pensioners

This section summarizes the results and discusses differences in the results for men and women who received 43(5) benefits.

Three hundred twenty-six of the 666 workers in the sample had one or more episodes of post-injury employment. Their potential wages from date of first award to time of survey totaled $110,050,061 and they earned $8,102,250 during that period. Assuming that workers who were employed at the time of survey continue to work, their projected earnings to age 65 are $30,163,999. Seventy-eight and eight-tenths percent (30,163,999/38,266,249) of the total post-injury earnings of 43(5) pensioners are the earnings from time of survey projected for 110 pensioners who held permanent jobs at the time of survey and were assumed to continue working until age 65.[35]

The 666 men and women would have earned a total of $216,535,383 if they had not been injured and worked until age 65. The ratio of wage losses to potential wages is 80.2 percent.[36] Ninety-four and six-tenths percent of the 43(5) recipients incur a loss.

The wage loss ratios of the 43(5) beneficiaries are substantially larger than those of other partially disabled pensioners but show less variation with severity of disability (Table 9). Pensioners not receiving supplements are less likely to incur wage losses than 43(5) recipients because 43(5) supplements are paid only if the "impairment of the earning capacity of the worker is significantly greater than usual for the nature and degree of the injury."

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[35] It was assumed that nine persons who held temporary or seasonal jobs at time of survey did not work after that time. There are no data that can be used to evaluate our assumption that persons in permanent jobs at the time of survey remain employed until age 65.

[36] J#3078.

Our only data on the wage losses of Ontario pensioners who don't receive a supplement are from the 1981 survey.[37] The wage loss ratios are described in Table 8. The ratio for the 1981 pensioners is 26.1 percent. As we described earlier, our methods overstate the actual wage loss ratios, especially among women who are self-employed or who worked part-time. The wage loss ratios for male pensioners are only slightly higher than those from the U.S. studies.

The most important results from the 1981 sample are the wage loss ratios for ratings of less than 10 percent. The ratios are 12.8 percent for men and 29.9 percent for women. These are the values that we use in our final estimates (Table 8).

Table 8

Mean Wage Loss Ratios, 1981 Survey

	Number	Wage Loss Ratio
Male		
Severity < 10%	1,471	12.8
Severity = 10%	1,708	21.0
Severity > 10%	4,802	29.4
Female		
Severity < 10%	141	29.9
Severity = 10%	277	46.4
Severity > 10%	562	60.7
All Cases	8,961	26.1

SOURCE: 1981 Survey

Estimating the Wage Losses of Ontario Pensioners

Our estimate of the ratio of wage losses to potential wages for pensioners potentially eligible for wage loss benefits is obtained by combining the best available data from several different sources.[38] The numbers of pensioners in each sex-severity category are taken from the population of pensioners who received benefits at the end of 1984. There were 90,169 active pensioners at the end of 1984, of whom 5,146 received supplementary benefits. Eighty-seven and eight-tenths percent of the 85,023 pensioners who did not receive a supplement were men and 12.2 percent were women. The ratios and the cohorts of pensioners are described in Table 9.

The estimated mean wage loss ratio for 1984 pensioners is 26.0 percent of their potential wages. This result is an approximation based, in large part, on data that are not representative samples of the population of potential wage loss beneficiaries. As we indicated, our assumptions overstate the wage loss ratio. Although confidence intervals cannot be assigned to the estimate, the 26 percent figure is likely to be substantially higher than the true wage loss ratio in Ontario. The estimate is a useful tool for planning and it should be improved as data are collected if a wage loss benefit system is implemented.

[37] Persons who were over 65 or self-employed or re-surveyed cases from the 1980 survey are excluded from these results.

[38] The method is described at p.125 *supra*.

Table 9

Mean Wage Loss Ratios, Active Pensioners, 1984

	Number	Imputed Wage Loss Ratio (percent)
Male		
Pensions – No Supplement		
Severity < 10%	15,323	12.8
Severity = 10%	14,651	20.6
Severity > 10%	44,649	25.1
Total	74,623	21.7
Pensions – With Supplement		
Severity < 10%	432	68.6
Severity = 10%	1,137	79.0
Severity > 10%	2,750	81.5
Total	4,319	79.6
Female		
Pensions – No Supplement		
Severity < 10%	1,454	29.9
Severity = 10%	2,957	34.2
Severity > 10%	5,989	28.7
Total	10,400	30.4
Pensions – With Supplement		
Severity < 10%	98	72.7
Severity = 10%	276	67.9
Severity > 10%	453	84.9
Total	827	77.8
Male and Female		
Pensions – No Supplement	85,023	22.7
Pensions – With Supplement	5,146	79.3
Total	90,169	26.0
All Active Pensioners	90,169	26.0

SOURCES: (1) Severity < 10%, Non-Supp: 1981 Survey.

(2) Severity ≥ 10%, Non-Supp: NYWC Study.

(3) Supplements: 43(5) Survey.

(4) Number of Pensioners: 1984 Active Pensions.

APPENDIX D

Hypothetical Costs of Proposed Dual Award System for Permanent Disability

The following table illustrates the hypothetical costs of permanent disability benefits that might have been awarded in 1985 under three alternative programs. It is important to note that these costings are based upon the costs of the permanent disability benefits awarded in 1985 under the current legislation and a net discount rate of 2% per annum rather than the 3% per annum adopted in June 1986 for the Board's 1985 published year-end liabilities. We have also retained the current disability rating schedule and assumed that permanently disabled workers either return to work with no wage loss or have no source of income other than that provided by the Worker's Compensation system. Thus these costings do not reflect changes in employer and worker actions that will occur when a system that provides lifetime pensions is replaced with a system that includes wage loss benefits.

Costs of One Year's Awards
($ millions)

	Proportion with Wage Loss		
	20%	25%	30%
Physical Impairment Pension			
Alternative A (10%)	$ 82	$ 82	$ 82
Alternative B (100%)	$ 813	$ 813	$ 813
Alternative C (50%)	$ 407	$ 407	$ 407
Total Cost of Dual Award System			
Alternative A (10%)	$ 511	$ 635	$ 760
Alternative B (100%)	$1,132	$1,228	$1,323
Alternative C (50%)	$ 787	$ 899	$1,011
Increase Over Current System			
Alternative A (10%)	-$ 35	$ 89	$ 214
Alternative B (100%)	$ 586	$ 682	$ 777
Alternative C (50%)	$ 241	$ 353	$ 465
Percentage Increase Over Current System			
Alternative A (10%)	-6%	16%	39%
Alternative B (100%)	107%	125%	142%
Alternative C (50%)	44%	65%	85%

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Cost of Permanent Partial Disability (Inflation Protected Using Net 2% Discount Rate) 1976-1985 (incl.)

Year	Number of New Life Pensions Awarded (in thousands)	Pension Costs $ Nominal Not Inflation Protected Millions	Pension Costs 1985 Dollars Not Inflation Protected Millions	Pension Costs in 1985 Dollars Infl. Protected Net 2% Disc. Millions	Lump Sum Costs Nominal Dollars Millions	Lump Sum Costs 1985 Dollars Millions	Total Costs 1985 Dollars – Real (Col. 4 & Col. 6)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1976	5.95	81.3	157.8	259.4	19.8	38.4	297.8
1977	6.14	88.5	159.3	261.3	21.9	39.4	301.1
1978	5.27	81.6	135.8	223.1	21.3	35.4	258.5
1979	6.05	100.7	152.4	250.4	25.5	38.6	289.0
1980	6.05	128.4	178.2	293.0	28.3	39.3	332.3
1981	6.54	158.8	200.4	329.9	32.3	40.8	370.7
1982	8.54	216.2	250.4	412.3	44.7	51.8	464.1
1983	8.94	250.0	275.8	454.4	50.9	56.1	510.5
1984	10.23	294.9	309.6	510.6	54.8	57.5	568.1
1985	10.06	296.7	296.7	489.4	56.7	56.7	546.1

SOURCES: (1) New Life Awards – Exhibit I (Appendix I of Corrections to W. Johnson's report) originally from Actuarial Services' RD 63 SAS Summaries of the Pension Master (Oct. '85 & Jan. '86)

(2) Actuarial Services Schedule 1 awards V442 December Computer Runs (OD-1455)

(3) Column 2 Adjusted by Amendment Factors, which are from Column 2 of Table 5 of corrected W. Johnson's paper – Exhibit II

(4) Column 3 multiplied by a weighted capitalization converter (2% discount), weighted by per cent of males & females (Exhibit III)

(5) Claims Adjudication Branch Annual Reports

(6) Column 5 Adjusted by Amendment Factors in 1985 dollars (Exhibit II)

* Note: Includes lump sums at net 7% discount rate.

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